THE BOOK of KNOWLEDGE

THE COURT OF FAIRYLAND

We have been o'er land and sea
Seeking lovely dreams for thee.
Where is there we have not been
Gathering gifts for our sweet queen?
We are come with sound and sight
Fit for fairy's sleep to-night.

And before thy sleeping eyes
Shall come glorious pageantries:
Palaces of gems and gold,
Such as dazzle to behold;
Gardens, in which every tree
Seems a world of bloom to be.

During slumber's magic reign
Other times shall live again—
First thou shalt be young and free
In thy days of liberty;
Then again be woo'd and won
By thy stately Oberon.

The Book *of* Knowledge

The Children's Encyclopædia

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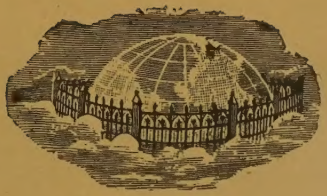

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This is a short guide only to the principal contents of this volume. It is not possible to give the titles of all the Poems and Rhymes, Legends, Problems, color pages, questions in the Wonder Book, and many other things that come into the volume; but in all cases are given the pages where these parts of our book begin. The full list of these things comes into the big index to the whole work.

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WHAT THIS STORY TELLS YOU

WHEN we speak a word we make the air tremble; every different word makes the air tremble in a different way. We call these tremblings air waves. But an air wave does not carry sound far enough, or fast enough, so we use the telephone, which changes the air waves into electric waves, which travel along the wire quicker than sound travels from the tongue to the ear. When we speak into the telephone, an iron disc changes the air waves into electric waves, which travel along the wire to a disc at the other end. When they strike this disc the electric waves become air waves again, and give off the same sounds as the sounds which made the waves. These sounds are the words from our lips. Our words strike one disc and become electric waves; the waves strike another disc and become words again, because both discs are in tune and give off exactly the same vibration when the waves strike them.

THE WONDER OF THE TELEPHONE

CONTINUED FROM 316

NOT very long ago at a public dinner in a New York hotel a telephone instrument stood at every place. During the evening it was announced that a gentleman in San Francisco, known to them all, would speak to his friends. The diners took up the receivers, and clearly and distinctly, not only the words but the very tones of their friend, came to them across three thousand miles of mountain, valley and plain.

The telephone has become so much a part of our daily life that we hardly realize how much we depend upon it until we try to think how difficult it would be to do without it. We call the doctor, the plumber, the grocer or the butcher; the business man uses it dozens of times every day; we call our friends to talk over our phones with them. Over the wires come good news, bad news, sighs, laughter, with all the little tricks of speech by which we distinguish one voice from another. How is it done?

WHAT DO WE MEAN WHEN WE SAY THAT WE HEAR A SOUND?

You are told in another volume that sound is the sensation produced upon our nerves by certain waves in the air. When we speak air is set in motion, the waves beat upon the drums of the ears, the nerves of the ears report them to the brain which translates them into words again. But these waves scatter in every direction, growing fainter all the time, or they may be broken up by other waves in the air. Therefore, you can not hear the human voice very far away, and so we say we can not hear because of the distance or the noise. This means either that the waves have become too weak to make an impression or that other waves interfere with the speech waves. Moreover, the sound waves do not travel very rapidly. You have seen a flash of lightning and then several seconds afterward have heard the thunder; or you have seen the smoke at the mouth of a gun and later have heard the report. This is because the light waves travel much more rapidly than the slower sound waves.

Long ago it was found that sound waves are carried much further through some metals than through the air, as is explained in Volume XV. A toy telephone was invented more than two hundred years ago. In another part of our book you are shown how to make one. If you take two tin cups without bottoms, fasten a piece of parchment tightly over one end of each, make a tiny hole in the centre of each piece and stretch a wire between them, you have a telephone with which you can talk with your friend across the street, or in the next house. This simple toy will not

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carry the waves very far, but from a beginning like this the wonder of the telephone has come.

MEN WHO ALMOST SAW HOW TO MAKE A TELEPHONE

In 1837 Charles G. Page, of Salem, Massachusetts, seemed to see that electric waves might carry sound; and in 1854, a Frenchman, Charles Bourseul, suggested that speech might be carried by electricity. He did not go on with his idea, nor did a German, Johann Philipp Reis, who made a rude electric telephone in 1860. It did not work very well and the difficulties seemed too great to be overcome. All of these had a part of the idea, but none of them carried it out.

In 1874, Mr. Alexander Graham Bell was making some experiments with sound waves, hoping to discover a way to help deaf children to speak. He found that not only could sound waves be shown to the eye, but that they could be sent over the wires by electric currents. Another step and the human voice was carried for miles. Elisha Gray, of Chicago, was working on the same idea at the same time. On February 14, 1876, Mr. Bell filed an application for a patent in Washington. Just two hours later Mr. Gray made an application also.

The instruments of both were clumsy and crude. They were likely to get out of order and voices were not very distinct; but the principle was correct. The new invention made a great sensation at the Centennial Exposition at Philadelphia in 1876, but no one dreamed of the growth of the idea. Hundreds of improvements have been made since, but they have been only improvements, not new discoveries. Perhaps the inventions of Thomas A. Edison have been most valuable, but there have been many others almost as important.

This is one of the many central offices in the city of New York. The wires from several thousand telephones all run into this office, and are connected to the back of the long switchboard which lines the room. Trunk lines which connect this particular central with other central offices, or with other towns, are also brought in behind the switchboard, before which the operators sit. Now let us see how a telephone call is made.
All pictures in this article by courtesy of the New York Telephone Company.

The waves of sound from your mouth beat upon a disc in the mouthpiece of the telephone. This disc is connected with wires through which an electric current flows. The slow sound waves are caught up and travel instantaneously to another disc perhaps miles away, which is set in motion just as the first

WHAT HAPPENS WHEN YOU CALL

The subscriber finds in the book the number of the man with whom he wishes to talk, and lifts the receiver from the hook. Immediately a tiny light glows under his own number in the central office. In some small central offices a bell rings instead.

The operator pushes one of a pair of brass plugs connected together into a hole, or "jack," above the light. This connects her with the subscriber. She asks for the number of the telephone he wishes. One should be careful to give the right number.

If the number is in the same central, she picks up the companion plug and touches it to the lip of the jack. If a click is heard she knows that some one is using that telephone and reports "busy."

If she hears no sound she pushes in the plug, and then presses a button which rings the bell connected to the telephone desired. The person called takes down the receiver and conversation begins.

disc against which you spoke. It gives out words to the listening ear. Your friend speaks against still another disc and the waves from it strike the disc you hold to your ear and you hear the distant voice.

NO ONE CAN EXPLAIN WHY WE HEAR A SOUND

We cannot explain this marvel. No one can tell why these vibrations should set up nerve currents which our brain transforms into words. It is all mysterious, but it is true, as you know. So the telephone business has grown until now it employs over two hundred thousand men and women in the United States. More than twenty million miles of wire are stretched like spider webs through the whole country, or perhaps are buried underground, or are even carried for miles through water. We may telephone to a lonely farm, or to a fishing station on an island, as well as to our friends in a village or a city. Now men are working to enable us, by means of electric waves of another sort, to telephone without wires.

WHAT HAPPENS WHEN YOU CALL A NUMBER

But every one can not have separate wires running to the houses or offices of every one else. So all the wires run to a central office called a telephone exchange. When you wish to talk to a friend you call up "central" by lifting your receiver from the hook, or in an old-fashioned instrument, by turning a crank. A girl in the office answers and, when you give the number, connects your wire with that of the one with whom you wish to talk. In large cities where there are many telephones, all the wires cannot run into one office, but there must be many "centrals," with such names as Chelsea, Riverside, Main and the like. Into such an exchange all the wires in a certain district run. When you wish to talk to some one in another part of the city "central" connects you with that exchange and asks the girl there to give you your number. The same thing happens when you wish to talk to some one in another city.

GOOD MANNERS IN USING THE TELEPHONE

Sometimes it is even more complicated than this. Hotels and great business houses sometimes have dozens, even hundreds, of telephones, but these are not directly connected with "central." Since all of these will not wish to talk at once, only a few wires connect such a building with "central." There is a private exchange which you must ask to connect you with "central," or which asks "central" to give you the number you wish.

If you can not find the name you wish in the telephone book, you may ask for "Information." In every office there is some one whose duty it is to keep track of all new subscribers, whose names are not yet in print, and give their numbers to those who inquire. Though all this seems very complicated, it is done very quickly. Generally, it is only a few seconds from the time you lift the receiver until you hear an answering voice, perhaps ten miles away. Of course, if your friend does not hear the bell, or does not answer promptly, you will be delayed. It is good manners to answer at once, and to speak clearly and distinctly, with your lips near the mouthpiece, or transmitter, as it is called. It is not necessary to shout. You should be as polite when talking over the telephone, as if you were in the presence of the person to whom you are talking. Nor should you become angry with the operators. In most cases any delay is not their fault, and if every one spoke distinctly few wrong numbers would be called.

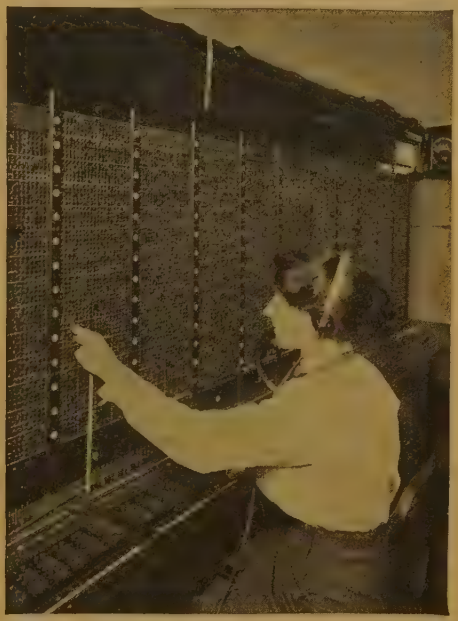
TELEPHONES IN THE UNITED STATES AND CANADA

No other countries have so many telephones as the United States and Canada, and nowhere else is the service so quick, so cheap and so good. In most parts of Europe few private houses have telephones, while in the United States and Canada there are many towns where nearly every office or dwelling has one or more. In the country districts you may see the telephone poles and wires along every road. The farmer and his family can talk with their neighbors, or with the people in the towns. Not all of these rural telephones have a separate wire for every subscriber. Several instruments are often attached to one wire, and different signals call the subscriber desired. Sometimes it is annoying to be on a "party line," for you can not talk if some one else is talking, and every one on the line can hear what you say.

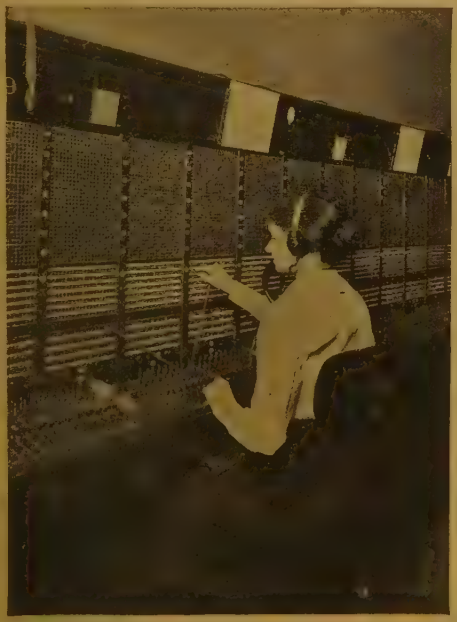
THE NEXT STORY OF FAMILIAR THINGS IS ON PAGE 415.

CALLING UP ANOTHER CENTRAL

Most calls, however, are for other centrals. If this is one, instead of pushing in the plug, she presses a button which enables her to talk with an operator in that central, and asks for the number desired. Now let us see what the other operator does.



The operator in the second central assigns a trunk line between the two offices, and then picks up a plug connected with that trunk, and tests the number desired to find whether it is busy. Trunk lines run directly from every central to every other.



The operator in the office where the call originated meanwhile picks up the companion to the plug already inserted in the caller's jack and inserts it in the jack of the trunk which has been assigned.

The other operator, if she has found that the number desired is not busy, inserts the plug belonging to the trunk in the jack. The bell belonging to the telephone desired then begins to ring.

THE END OF A TELEPHONE CALL

The man who is wanted hears his bell ringing, takes his receiver from the hook, and at once conversation begins. All of these different steps have taken only a few seconds from the time the first man lifted his receiver from the hook, perhaps ten or fifteen miles away. It seems very wonderful.

In large cities the wires are usually carried underground in bundles which are generally covered with lead pipe to protect them. Here we see the vault underneath a central office. Each of these cables carries many wires from the street to the switchboard, which we have shown on an earlier page.

In a small town or city, or in the suburbs of a great city, the cables are not usually placed underground. Very often they are carried on poles as shown here. The wires to the residences or places of business run from ioints in the cables. When wires are strung separately and left uncovered they are likely to be broken by the weight of sleet, or ice, or by accident, and so cause annoyance, or even danger.

Yokohama, chief port of Japan, has grown in half a century from a fishing village to one of the most important commercial centres in the Far East, with a foreign trade of $100,000,000 a year.

JAPAN AND KOREA

CONTINUED FROM 214

First Emperor of New Japan

OFF the western shores of the great Eurasian continent—that is, the continent formed of Europe and Asia—lies the group of islands which form the British Isles. Off its opposite eastern shores, half-way round the world, lies another group of islands, a long chain of them, stretching from the tip of the huge, bare peninsula of Kamchatka to the tropical, half-civilized island of Formosa, off the coast of Central China. These islands form the Empire of Japan, more than three times as large as its counterpart of the West.

Japan is often called the Britain of the Pacific, so many are the points in common between the two countries. Both are near enough to the great continent, the one on the west, the other on the east, to be strongly influenced by it; both are far enough away from it to develop a sturdy independence and a definite character of their own, for both have been kept apart from encroaching neighbors by protecting seas.

It is the call of the sea, the inviting readiness of its open paths, the stern discipline it gives to all who venture upon it, that have fashioned the characters of Japanese and British alike; both are nations of sailors and traders.

The Japanese often compare the shape of their country with that of a dragon-fly. Its body consists of the four chief islands that shut in the Sea of Japan; the two long feelers are Sakhalin—half of which belongs to Japan—and the Kurile Islands, which brush Kamchatka. The Lu-chu Islands and Formosa form a fine tail.

The part of the great continent that lies nearest the body of Japan is the peninsula of Korea, which separates the shallow Yellow Sea from the deep Sea of Japan. Korea, the Land of the Morning Calm, is almost as large as Utah, and, like its island neighbor, Japan, has a long history of its own, but not so long as that of China.

What is more beautiful and suggestive of unearthly visions than the sight of the blazing sun rising from the sea, his beams making the waves look like moving, molten gold, and tinting the wide sky above with every delightful and delicate shade of color? The men of China have ever gazed eastwards on this glory, and their oldest wise men wrote down in their oldest books wonderful stories of gods and heroes living in the islands hid in the gorgeous

eastern ocean. And so Japan, this Land of the Rising Sun, came to be looked upon as a mysterious and sacred country, and its people proudly claim descent from the shadowy great ones. The beliefs which grew up round the old picturesque stories led, in course of time, to the national worship of unseen gods and spirits, of ancestors, and powers of Nature, which still has a strong hold in Japan. This religion is called Shintoism, a word that means "the way of the gods."

THE PEOPLE OF OLD JAPAN WHO WERE EVER DRIVEN BACKWARD BY INVADERS

It is generally thought that the first people, after the cave-dwellers, to settle in Japan were Ainu, who probably crossed over from Siberia; and a delightful change they must have found it in the southern islands, with their pleasant and warm climate and beautiful, fertile country. The climate, on the east coasts of Japan is tempered by a warm stream from the south, just as the north-west coasts of Britain are washed by the warm Gulf Stream from across the Atlantic. The Ainu, however, were ever pushed back from the more desirable parts of the land by new-comers of higher civilization. Some were of Mongol race, like the Chinese, and came from the neighboring continent across the Sea of Japan, from Korea and what is now Russian and Chinese Manchuria.

Other new-comers came floating along the warm, dark stream from Southern Asia. These were of Malay race. Waves of these two races came time after time, and they are the true ancestors of the Japanese people, but the Ainu have never been driven right out of the country. There are still some thousands of them in North Japan, living apart from the other people. They are remarkable for their general hairiness.

They are a peaceable people, not caring for progress, but with many good qualities. They gain their living chiefly by fishing and hunting in the dense forests which harbor wild animals and game, in the northern island of Yezo.

A LINE OF EMPERORS THAT HAS RULED FOR MORE THAN 2,500 YEARS

The Japanese keep many festivals; two of the principal ones are February 11 and April 3. On the first of these days they celebrate the accession of their earliest emperor, and on the second the day of his death. His name was Jimmu, and he is said to have lived more than twenty-five centuries ago. The Japanese claim that from him their one dynasty, or family, of emperors has ruled in unbroken succession ever since; but the dates for the first part of this long time are very uncertain. Still, we know that the Japanese were advancing in civilization, and the early independent tribes were passing under the leadership of one dominant tribe centuries before Julius Cæsar "discovered" Britain.

The history of Korea, too, goes very far back. More than a thousand years before Christ, there was a migration of the old civilized Chinese into the mountainous peninsula. They ousted the cave-dwellers, and formed a cluster of independent states, which later united under one rule. A great stream of Chinese and Koreans poured into Japan, and merged with its people during the centuries before and after the birth of Christ, and the name of a fabulous great Japanese empress, Jingo, stands out in the third century of our era as making many conquests in the land of Korea.

HOW THE MIKADO BECAME A SACRED FIGURE, HIDDEN FROM HIS PEOPLE

Nothing is certain about these early stories, except that there was much coming and going between the peninsula and the islands. We know that the Japanese, like the Chinese, busied themselves quite early with bringing water to their rice-fields, making canals, and developing trade and manufactures. They also from the first paid great reverence to their ancestors. By degrees the person of the ruler, the Emperor, or Mikado, became sacred and unapproachable to the mass of the people, as we have seen was the case in China.

It was about the sixth century, when the Angles and Saxons were settling in their new homes in Britain, that the religion of Buddha spread into Japan by way of China and Korea. Eventually it took its place side by side with the older national religion of Shintoism, not driving it out, but supplementing it, as it were; and beautiful Buddhist temples, as well as Shinto shrines, rose up over the country.

Troublous times followed. There were many grades, or different kinds, of nobility all fighting to be first, and many officers and ministers, into whose hands

the real government of the kingdom passed, as the Mikado became more and more a mere puppet in a gilded prison, his person sacred and invisible, except to the highest officials. The head of the acting Government for 700 years was the Shogun. Yoritomo was the name of the first Shogun. He was a great general and organizer, and died the same year that King John ascended

surrounded by armed retainers, called samurai, and when a common foe arose, those who held the land were bound to provide forces to meet the danger, very much in the same way as was done in England in feudal times.

One of these times of national danger arose towards the end of the thirteenth century, when Kublai Khan, the Mongol Emperor of China, sent a great host of

IN THIS MAP OF JAPAN AND PART OF CHINA THE JAPANESE EMPIRE IS INSIDE DOTTED LINE

the throne of England. The last Shogun gave up his power, henceforth to live as a private gentleman, in 1868.

In many ways the state of affairs in Japan during the rule of the Shoguns may be compared to that of Britain before and during the Wars of the Roses. Quarrels between great rival families were fought out in pitched battles; nobles lived in their strong castles,

Chinese and Koreans, to invade Japan. As with the Spanish Armada off the coast of Britain, the great host was destroyed by a storm, and the island empire of Japan can boast that no invader has since tried to descend on its shores.

We remember how Marco Polo stayed at the court of Kublai Khan. Naturally, he heard much of Japan, and when he

returned to his native country, he was persuaded to write a book about his wonderful travels. In it he introduced Japan to Europe, thereby greatly exciting and interesting his readers. He called it Cipango, and said it "is a large island towards the east of China, in the high seas. And a very great island it is. The people are white, civilized, and well favored. They are idolaters, dependent on nobody. And I can tell you," continues Marco, with many more interesting details, " the gold they have is endless, for they find it in their own lands."

In the map used by Columbus, two centuries later, this rich island was drawn large on the East of Asia, with no American continent between it and Europe. As to Korea, so little was known about it in the West in those days, that the old map-makers had recourse to a favorite device of theirs to cover deficiencies of knowledge: they drew an elephant to fill in gaps.

THE ANCIENT PIRATES OF JAPAN, WHO SAILED THEIR JUNKS TO AMERICA

In those days, when men were reaching out to find each other, and to discover new countries all over the world, there were pirates on every sea. The Japanese were not behind in daring acts, and their junks faced the seas fearlessly, passing to Siam, to India, and possibly reached Mexico.

It was not long after the death of Columbus that the Portuguese found by an eastward route what he had tried in vain to find by sailing westward. From the rich Indies they passed to China, and thence to Japan. Christian missionaries soon followed the traders and explorers. The famous Jesuit, Francis Xavier, of whom we read on another page, managed to get a footing in the southern island of Kiushiu, and conducted, under difficulties, a short but brilliant mission. He says in his letters home that the Japanese "are wonderfully inclined to see all that is good, and have an eagerness to learn."

Towards the end of the sixteenth century, Nagasaki, the chief southern port, with its fine harbor, where the largest Portuguese ships could ride at anchor, became a Christian city. Christian churches were built on the sites of old Buddhist temples; but the progress of the new religion was stopped before long. A great soldier of fortune, Hideyoshi, rose to the highest power. He is often called the Napoleon of Japan, so great were his victories. He conquered Korea, and even planned the invasion of the Chinese Empire.

A GENERAL WHOSE DESCENDANTS RULED JAPAN FOR 250 YEARS

His successor, also a great general, overthrew all his rivals, and founded a dynasty of Shoguns that ruled a united Japan in peace for 250 years. To secure this peace, the Catholic missions and the foreign traders were sent away, and the country was closed to all but the Dutch; under narrow limits they alone were allowed to trade at Nagasaki. Some of the most beautiful Japanese work is to be seen at The Hague, gifts from the Mikados of those days. Very little about Japan was known in England during the reigns of the Stuarts and the Hanoverians.

It was in the middle of last century that there came a great and wonderful change. Japan had gone on all those peaceful years making improvements in the produce of the country, in the fields, in the tea-gardens, in the hand-looms, in the pottery factories, and in many other arts in which the people are so clever and tasteful. But discontent was smoldering, and a longing to expand was growing in the hearts of the people.

When the bold Commodore Perry arrived with a United States fleet, to insist on pulling down the barriers which had kept Japan away so long from the rest of the world, the old system seemed to fall at a blow. Treaties with various Powers were signed, Yokohama was opened to foreign trade the Shogun had to retire with all his old-fashioned ideas and ways, and the Mikado was restored to the full and ancient powers of his office, and reigned over the people in fact as well as in name.

JAPAN'S GREAT LEAP FROM THE SLEEP OF CENTURIES INTO THE LIFE OF TO-DAY

It makes us almost breathless to read of the rapid changes that have taken place in Japan during the last seventy years. Once in contact with the West, there were no half-measures. The old feudal ways were swept away in most dramatic fashion, as Japan leaped out of the Middle Ages into the full stream of modern life with its newest inventions

PEOPLE OF JAPAN, INDOORS AND OUT

A Japanese girl of a certain class is often seen with a gaily-colored umbrella, which she carries so daintily.

The jinriksha is the carriage of Japan in which ladies go visiting and the riksha men can travel very rapidly.

A poor family at dinner. The Japanese sits on the floor and carries the food to his mouth with chopsticks.

Here are some girls taking dinner together. The chopsticks used are very much like our lead pencils.

The girl sitting down is writing a letter. The pen is a fine brush and the ink is a stick of Indian ink.

The lady on the right is receiving a visit from her friend, and this is how they greet one another.

and movements. Students were sent to Europe and America to gain Western knowledge. European and American instructors were brought to the country and roads were improved and bridges built; railways, telegraphs, telephones were started all over the country. Banks, warehouses, mills, and factories rose up quickly, law courts were established as well as a constitution, granted in 1889, which gave a House of Representatives elected by the people.

Education on modern Western lines has been started everywhere; Western fashions in dress and manners have been largely adopted. A splendidly efficient navy and army have been created. They were needed, for, besides all the astounding upheaval and amount of work and expense involved in all the home changes, Japan has had to face two wars with its opposite neighbors. The first, with China, was in 1894 and 1895. Six months decided the contest. The island of Formosa was added to the Mikado's empire, and the world saw that a new power had arisen to help to shape the destiny of the Far East.

JAPAN'S VICTORIOUS STRUGGLE WITH THE GREAT POWER OF RUSSIA

Japan joined the European Powers in the relief of Peking at the time of the Boxer rebellion, and four years later found herself in the throes of a contest with Russia. The losses and suffering were very great on both sides, but the Japanese were everywhere victorious. They won the great battle of Mukden, destroyed the Russian fleets one after the other, and captured Port Arthur. Finally, at President Roosevelt's mediation, the two nations made peace, and a treaty between them was signed at Portsmouth, N H., in August, 1905.

Every Japanese boy is brought up to believe that the greatest honor that can befall him is to die for his emperor and country if need be, and so it is no wonder that the flag of the Rising Sun was carried triumphantly from start to finish. Japan gained half the island of Sakhalin by this war, and established a sort of protectorate in Korea. In 1910 the Japanese government took entire charge and Japanese officials manage the railways, the post offices, and many other matters of great importance to the country.

In 1914, Japan, as an ally of Great Britain, immediately declared war against the German Empire, and soon captured the strong German fortress of Kiao-Chao in China. The Japanese fleet took over some German islands, and also searched the seas for German commerce destroyers. Japanese troops also went to Siberia to protect the interests of the Allies there. At the close of the war Japan succeeded to German rights in China.

A DESERTED PALACE IN KOREA

Taking steamer from Nagasaki, we can visit this ancient and interesting country, delightful in spring and autumn, which has for centuries been so connected with both China and Japan. There is a railway from its chief port, Chemulpo, to the capital, Seul, which is shut in by a wall and eight gateways, like Peking on a small scale. There are many interesting buildings, a marble pagoda and a bell tower, temples and tombs. The saddest sight is the vast deserted palace—deserted because the Korean empress was killed there in the course of the war.

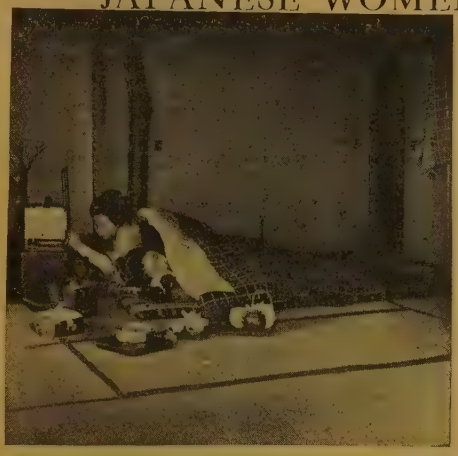
The Korean people are poor and spiritless, and for long paid tribute to their powerful neighbors to let them alone. The valleys are very fertile, and crops of various kinds are raised. There are large forests, and the metals are believed to be very abundant; but there is still much to do in developing the resources of the country.

It would need a Japanese to do justice to the land whose beauty has so much to do with the fervent patriotism and perfect taste in art of its people. We must think of all we have seen most beautiful in our own country, and put it all together; and then it falls short of what we can see in Japan. For the lovely scenery of this part of the world is set off, as it were, with a garment of most gorgeous and wonderful coloring, made of blossoms of every hue.

JAPAN, THE LAND OF DAZZLING BLOSSOMS AND FAIRY LANDSCAPES

Public holidays are set apart for people to go out to admire the fruit-trees in flower, the cherry, and plum, and peach blossoms. Men travel miles to visit the great fields of irises and lilies, all most delightful to the eye. Many of our favorite flowers come to us from

JAPANESE WOMEN AND CHILDREN



This is a Japanese bedroom, and the inmates are just retiring for the night. The bed is a mattress spread on the floor, and the wooden pillow fits the neck.

Japanese ladies are fond of playing upon a stringed instrument something like our banjo. The music that they produce sounds very strange to Western ears.

Japan is sometimes called the Paradise of Children, and it has been said that the babies are so happy that they never cry, but this is not quite true or natural.

These boys seem to have heads like blacking-brushes. When boys can go out they are taken to have their hair cut short so that the hair will grow stiff.

In Japan the gardens seem like fairyland, and the Japanese gardener always tries to arrange his shrubs so that one at least shall be in bloom all the year round.

The poorer women of Japan work hard, and in the summer they go into the fields with their children and all work together. Here we see them taking a rest.

Japan; but there the purple wistaria hangs in profusion over great trellises, the camellia-trees grow as high as a house, and the masses of roses, convolvulus, and azaleas form dazzling banks of color. The tall bamboos, so useful as well as ornamental, and high, feathery grasses, graceful pine-trees and lacquer-trees, all help to make up the real fairy landscapes of which we get hints on the screens and fans and embroideries that have been worked and painted by those who live within sight of these beauties of Nature.

We can perhaps match most of the fine mountains and the leaping, foaming waterfalls, the rich plains and valleys and the short rivers that water them—the longest Japanese river is shorter than most of ours. But we have nothing to put beside the mysterious wonder of Fuji-yama, the sacred mountain so deeply beloved by the Japanese and reproduced by hundreds of their artists. It rises, solemn and lonely and grand, in a beautiful cone-like shape nearly three miles above the plain, and it is more than a hundred miles round its base.

FUJI-YAMA, THE FAMOUS JAPANESE MOUNTAIN THREE MILES HIGH

The mountain is near the sea, and not far from the capital of the empire, Tokio. Rudyard Kipling calls it "the keynote of Japan," so great is its impressiveness as one enters the bay, especially if its top is covered with snow. This only melts in August and September. On its lower slopes is every sort of beautiful vegetation.

It takes many hours to climb the three miles of its height, even with the help of coolies; but what a view from the top! Over fertile plains and glinting water, to mountains beyond. This climb of three miles into the air gives us an idea of the changes in vegetation to be seen when traveling thousands of miles towards the Pole. At the top of the mountain the climate is that of the tundra, or bog-land; below that come the low, stunted trees. Below them we come to pine forests, then grassy lands and steppes, then all the crops that grow in warmer regions—barley, beans, peas, tea, cotton, and rice.

From the heights of Fuji-yama we can see another important mountain, the active volcano Asama-yama. Most of the Japanese mountains are extinct volcanoes, but Fuji-yama still sends up a little jet of steam, and many earthquakes take place, often causing terrible damage and loss of life. This is one reason why houses are very lightly built in the Mikado's country

There are a great number of large towns in Japan, several with tens and hundreds of thousands of inhabitants. Tokio, the capital, on the largest island, Nippon, or Honshiu, contains a population of two and a quarter millions.

THE SPLENDID TEMPLES AND THE FAIRY PALACE IN THE JAPANESE CAPITAL

The temples and tombs of the Shoguns form one of the great sights of this picturesque city, with its avenues of cherry-trees. The Imperial Palace is here, too, with its crystal chambers and beautiful ceilings and brocades. In November thousands of people congregate to see the magnificent chrysanthemum shows. The flowers are much larger and more beautiful than those we are accustomed to see in England. The distances are so long in the large cities that jinrikshas such as we have seen at great expositions are greatly in request. Coolies, or laborers, run them swiftly about, even on the country roads.

Yokohama, the port of Tokio, is the place where most visitors land. At Kamakura near by is the tomb of Yoritomo, the first Shogun, and also the great bronze image of Buddha, one of the greatest of Japanese works of art. It is nearly fifty feet high, and leaves a wonderful impression of peace and majesty on the mind.

The Japanese have a proverb: "Do not use the word magnificent till you have seen Nikko." This is not only a most beautiful town, but it includes a whole mountain district, about 2,000 feet above the sea. Cascades and autumn tints and thick vegetation of every kind are among the natural beauties, and there are deeply interesting tombs of Shoguns and saints, and splendid Buddhist temples.

THE HARBOR CITY THAT HAS ALWAYS LINKED JAPAN WITH THE WEST

The island of Kiushiu, on which Nagasaki, with its landlocked harbor and granite docks, is situated, has played a large part in the country's story. Legend has it that from here Jimmu and Jingo set forth on their

THE TEMPLES AND IDOLS OF JAPAN

Shintoism means respect for ancestors or heroes. Here is the entrance to a very famous Shinto temple.

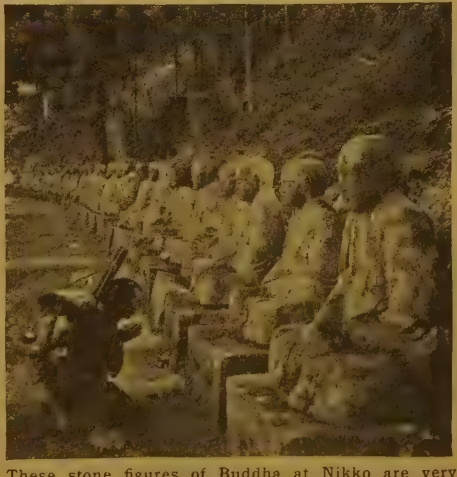
The mass of the Japanese are Buddhists. This is the interior of the Ikagame temple, one of the finest in Japan.

Japan is a land of giant idols. This strange bronze Buddha with its great halo is to be seen at Hiogo.

This bronze image of Buddha is 50 feet high and nearly 100 feet round. It was cast at Kamakura in 1252.

Here is another striking image of Buddha that forms one of a pair of bronze figures at a Tokio temple.

This is a Buddhist prayer-shop. The prayers are on paper, and are offered by being thrown to the winds.



These stone figures of Buddha at Nikko are very ancient. In 1902 a flood carried away some of them.

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heroic expeditions. Upon this island the Portuguese traders and missionaries landed, and European civilization was first made known to the Japanese. During the time that Japan was closed it was Nagasaki that was the only port opened to the West.

A GREAT CITY THAT HAS GROWN IN A FEW YEARS FROM A FISHING VILLAGE

Since the door has been flung wide open, Kobe, on the beautiful inland sea, has grown from a fishing village into a large and bright city, where most of the home trade is carried on, and foreign firms are well represented. We can take the train along the lovely shores of this Mediterranean of Japan between Honshiu and Shikoku, the smaller southern island; or, better still, pass on our way from Nagasaki in a steamer through the deep, clear, blue water from end to end, passing countless islands and hills clothed in vivid green; and there is ever the living interest of the numerous fishing boats, and curious-looking junks, and tiny villages hidden in unexpected nooks.

Osaka is another manufacturing centre near the inland sea, and is renowned for its beautiful temple and fine bazaars. By Osaka flows the river that drains Lake Biwa, the largest lake in Japan, about the size of Lake Geneva, and, like it, very beautiful. It is a grand sight on a warm summer night to see the crowds of people enjoying the pleasures of boating, the music on the water, and the dancing light from thousands of lanterns. Refreshments are taken in tea-houses of which there are many on its shores.

From Osaka we can take the train to Kioto, an old capital of Japan, famous for its wonderful architecture and interesting memories. The Mikado's old palace here covers many acres of ground.

THE WORKERS IN THE CITIES AND THE WORKERS IN THE FIELDS

In these and other great towns we find many of Japan's millions of inhabitants. Many, too, are engaged in the fields, for agriculture is actively carried on in Japan, as in China. Thousands are employed in the fisheries on the seas, lakes, and rivers, for fish is very plentiful and is one of the chief articles of food. Tall, smoky chimneys are rapidly rising in many industrial centres in Japan, but the work of the greatest beauty, which has influenced so much the taste of the West, has been done from time immemorial by the patient, delicate handwork of men and women who are born artists.

Tea-growing and silk-weaving were introduced from China many hundreds of years ago. Porcelain made from kaolin, a fine white clay, is of world renown; carpets, baskets, beautiful lacquer work, every variety of fans and lanterns, and endless things for both ornament and use are made in Japan.

Unfortunately, we seldom see the more expensive real Japanese articles in the West. We have too often poor imitations made in our own shops; but if we study those in good shops and museums, we can gain much help in our efforts to know the interesting and artistic people of Japan.

HOW WE HAVE COPIED JAPAN'S DRESS AND JAPAN HAS COPIED OURS

Western dress has been adopted at court and in the Army and Navy, and in many circles; but the kimono, so familiar to us in dressing-gown shape, and in the popular musical play of the "Mikado," is still the distinctive garment of the country, made in gorgeous embroidered silks and satins for the rich, and in very simple materials for the poor. It is worn with a broad sash, which keeps all tidy, and serves, with the deep kimono sleeves, instead of pockets.

Japanese footwear is quite different from ours. There is a thick white sock, with a division for the great toe, worn with the shoe or clog, which is taken off on entering a house, so as not to soil the mats upon which the cushions used as seats are placed, for a Japanese house has little furniture. Often the greater part of the house is made of wood with windows of tough paper, and the partition walls are simply sliding doors. Paper serves for umbrellas and waterproofs, and a cloak made of thatch is often used by farmers and fishermen.

The beds are made of thick quilts laid on the floor, with wooden pillows, all being moved away in the daytime. Everything in a Japanese home is most tastefully arranged so as to give pleasure to the eye, and all is spotlessly clean.

JAPANESE WORKERS AT THEIR DAILY TOIL

The Japanese are a very artistic race, and their metal-workers, seen here, produce very beautiful objects.

Here we see workers making large metal wares. When beating the metal into shape they use their feet.

Rice is the chief article of food, in Japan, and here we see the rice being cleaned in a primitive machine.

In Japan everybody works, and here we see a family returning after the day's labor on the farm is ended.

In making and coloring dainty vases the Japanese excel, and here we see the pottery artists at work.

In this picture we see pottery being packed for Europe. Thousands of dollars' worth are sent to us every year.

Perhaps Japanese children have the happiest time of any children in the world. Their fathers and mothers are devoted to them, and train them from babyhood to be self-controlled and polite to everyone; to be gentle in their ways, and to be fond of work. And all this lays the foundation of lifelong happiness. Spoilt, selfish, idle, cross, and miserable children are rarely met with in Japan. They have plenty of lessons and plenty of play. And their toys! We all know the delights of Japanese dolls—the children are so like them—and the clever tops and kites, and wonderful model villages. There are many feast days specially for the children, when they are all dressed in their best and brightest kimonos and sashes, and look as gay as the flowers and butterflies.

A KOREAN LADY IN HER SEDAN CHAIR

KOREAN SCHOLARS WITH THEIR TEACHERS

The feast of dolls is for the girls, when the "honorable" dolls and the dolls'-houses, so carefully kept from generation to generation, are brought out and enjoyed, and the little ones have presents of dolls and dainty articles for their use. The boys have their turn on the Feast of Flags, when images of soldiers, heroes, wrestlers are bought for them, as well as helmets, flags, bows and arrows. The sham fight, which is a favorite game on this festival, brings to memory the fights of the rival clans in the old feudal days. Kite-flying and top-spinning, done in really scientific fashion are grand pastimes, and quite old men join in them with the children.

The dead are never forgotten in Japan. Every summer the Feast of the Dead is celebrated all over the country, with processions, the carrying of fans and banners, and the tombs are illuminated with beautiful lanterns shedding many-colored lights. The end of the feast at Nagasaki is very striking. After midnight thousands of little ships of straw, carrying small offerings of fruit and money, and the lighted lanterns from the tombs, are launched on the waters of the bay. As each little craft catches fire, the soul it is supposed to carry is said to have reached again the Unseen Land.

The Japanese visit the temples and shrines very much, and honor thousands of gods. Very often they make pilgrimages to distant shrines. The pilgrim bound for Fuji-yama can always be distinguished by his white kimono and large straw hat.

Many travelers now go to Japan, for Yokohama is the central station, so to speak, in a tour round the world, and all admire its scenery and flowers, and its temples, tombs, and festivals, which recall the deeply interesting past. But more interesting still is the life and work of to-day in the great cities, and in the wide-spreading country. The dear, polite babies, the bright young girls, so charming in manner; the swift rikshas whirling past; the shops full of the clever work of the nation; the passing crowds, so clean and docile and orderly—all are sources of continual charm and delight, and seem like part of a moving picture.

THE NEXT STORY OF COUNTRIES IS ON PAGE 465.

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Japan is the world's fairyland. With its beautiful scenery and its wonderful masses of dainty color, it seems more like a splendid playground than a country which is taking a serious part in the real work of the modern world.

THE WIND IN A FROLIC

By WILLIAM HOWITT

THE wind one morning sprang up from sleep,
Saying, "Now for a frolic! now for a leap!
Now for a madcap galloping chase!
I'll make a commotion in every place!"

SO it swept with a bustle right through a great town,
Cracking the signs and scattering down
Shutters; and whisking, with merciless squalls,
Old women's bonnets and gingerbread stalls.
There never was heard a much lustier shout
As the apples and oranges trundled about;
And the urchins that stand with their thievish eyes
For ever on watch, ran off each with a prize.

THEN away to the field it went blustering and humming,
And the cattle all wondered whatever was coming;
It plucked by the tails the grave matronly cows,
And tossed the colts' manes all over their brows;
Till, offended at such an unusual salute,
They all turned their backs, and stood sulky and mute.

SO on it went capering and playing its pranks,
Whistling with reeds on the broad river's banks,
Puffing the birds as they sat on the spray,
Or the travellers grave on the king's highway.
It was not too nice to hustle the bags
Of the beggar, and flutter his dirty rags.

'TWAS so bold that it feared not to play its joke
With the doctor's wig or the gentleman's cloak.
Through the forest it roared, and cried gaily, "Now,
You sturdy old oaks, I'll make you bow!"
And it made them bow without more ado,
Or it cracked their great branches through and through.

THEN it rushed like a monster on cottage and farm,
Striking their dwellers with sudden alarm;
And they ran out like bees in a midsummer swarm.
There were dames with their kerchiefs tied over their caps,
To see if their poultry were free from mishaps;
The turkeys they gobbled, the geese screamed aloud,
And the hens crept to roost in a terrified crowd;
There was rearing of ladders and logs laying on,
Where the thatch from the roof threatened soon to be gone.

BUT the wind had swept on, and had met in a lane
With a schoolboy, who panted and struggled in vain;
For it tossed him and twirled him, then passed, and he stood
With his hat in a pool and his shoes in the mud.

THEN away went the wind in its holiday glee;
And now it was far on the billowy sea,
And the lordly ships felt its staggering blow,
And the little boats darted to and fro.
But lo! it was night, and it sank to rest
On the sea-birds' rock in the gleaming west;
Laughing to think, in its fearful fun,
How little of mischief it really had done.

WHAT THIS STORY TELLS US

LIFE must have begun in the sea. We have seen that life of any kind must have food to support it, and until the seas were made there could be no food for life at all. For life of any kind must have water—nothing in the whole earth can live without water. The great waters, which cover nearly three parts of the earth, are crowded with life—the bottom of the sea is a carpet of living things, growing and dying, growing and dying, far from the eyes of men. Yet life can never become important in the sea, for life needs oxygen, and there is very little oxygen in the sea. The first living things must have swum ashore—helped, perhaps, by the moon, which makes the tides, so that life, washed ashore by one tide and carried back by another, could grow used to the land without a sudden change. On the land, life found the oxygen it needed, and all the progress of life has been made on the land.

HOW LIFE CAME OUT OF THE SEA

CONTINUED FROM P. 285

WE know for certain that there was a time in the story of the earth when there was no life whatever upon it. We know this because, as we see in another part of this book, the earth was once far too hot for any living thing. Now, in our story of life, which leads up to the story of our own lives, we have plainly to make a beginning just at that very time when life first appeared upon the earth, which, up till then, had shown no life at all; and I think we shall see that this is a very interesting story.

Now, to begin with, what was it that life wanted in order that it might exist at all? Well, we know that all living things must have food of certain kinds. We know also that all animals, large or small, require the help of the plants to prepare their food for them; but plants can make use of the simplest things in air and water and earth. Undoubtedly the plants, then, come first, and so far as the need of food was concerned they might have come long before they did, for the simple things that they required had long been on the earth. But there was one thing which they needed, and which, until this time, could not be supplied them; and that all-important thing was simply water.

Now, before we can understand this, we must remind ourselves that there are three different states in which water may exist. When it is wet or liquid we call it water. If we make it very cold it turns hard and solid, and we call it ice—but it is still water just the same. On the other hand, if we put it in a kettle and boil it long enough it will all be boiled away into the air in the form of vapor, just like the other gases of the air. It cannot be seen, but it is there all the same; and, indeed, there is always some water in the form of gas in the air. Now remember that it is still water, just as ice is water, only it happens to be not wet water, but gas water; just as ice is solid water.

Now that is all very simple and easy, and we all knew it, in a way, though perhaps we had not thought about it; and no one really knows anything he has not thought about. But though it is so easy, there is no bigger or more important fact in the whole world.

For if water, when it is very hot, is not wet, but is a gas, all the water on the earth must once have been in the form of a gas. Of that there is no doubt. How long there has been water in one shape or other on the earth, no one can say; but I am quite sure that it must have been for several millions of years, ages and ages before life came. Only, before life came all this water was gas; and

THE BOY WHOM FRANCE FORGOT

A LITTLE over a hundred years ago, a boy was born in the Palace of the Tuileries who seemed to be destined to rule over a great empire. His father was Napoleon Bonaparte, Emperor of the French, a man whose name was a terror to all Europe. His mother was the Empress Marie Louise, a daughter of the Emperor of Austria, whom Napoleon had married as his second wife after he had divorced the Empress Josephine. The baby's birth on the twentieth of March, 1811, was announced by the roaring salute of many guns; his coming was a great joy to the French nation as well as to his parents. He was given the title of King of Rome and his christening was a stately ceremony at the Cathedral of Notre Dame. It seemed as though he had a great future before him, and yet he grew up without a mother's love or a father's care. His short life was pitifully lonely. His early death was a relief to most of the people who thought at all of his existence, and his name is scarcely mentioned in the histories.

Francis Joseph Charles Bonaparte was born when it seemed to the world that Napoleon was at the height of his power, and every one thought that the King of Rome, as his baby son was called, was sure to succeed him on the throne of France. When the little boy was only two and a half years old his education was begun, and he was given lessons almost before his baby lips could repeat the words that were taught him. His father was determined that he should be well prepared for the great place he was to fill. But before the prince was three years old, Napoleon had been defeated by the bitter cold of the Russian winter. All the countries in Europe had combined against him. He had fought and lost the great battle of the Nations at Leipzig. Even then he might have kept his throne if he would have promised to be content with the kingdom of France, but this he refused to do and everything was taken from him. As the armies of the allies who had defeated the emperor neared Paris, Marie Louise fled from the city, taking the King of Rome with her, and Napoleon never again saw the son of whom he was so proud and loved so dearly.

The emperor was sent into exile on the little island of Elba in the Mediterranean. Marie Louise, who did not care for her husband, made no effort to go to him, and was quite content to obey her father's command that she should give him up. She agreed, too, to give up the title of empress, and was made Duchess of Parma and two other small Italian states. The title of King of Rome was taken from her son, and it was agreed that he was to succeed his mother as Duke of Parma.

This was in 1814, and the next year it seemed for a time as if he might be Emperor of the French after all. Napoleon escaped from Elba, and gathering a great army as he went, marched through France to Paris, and turned out Louis XVIII, the Bourbon king whom the allies had placed on the throne. But the emperor's second reign lasted so short a time that it is called the Hundred Days. Waterloo put an end to it forever, and lost for his son even his small dukedom. For after Napoleon had been banished to St. Helena, the little boy was given the title of Duke of Reichstadt by his grandfather, and it was decided that he should never rule.

By this time Marie Louise had gone to live in her duchy of Parma, but she did not take the duke with her. As he was not to succeed her it was thought better that he should be left in Vienna with his grandfather, who undertook his education. He was to be brought up as an Austrian subject, instead of a French prince, and so all his French attendants were sent away, except his nurse, and she soon went. He was placed in the care of an Austrian gentleman named Count Dietrichstein, who was called his governor, and he was still so young, that it was hoped that once he was surrounded by Germans he would forget all he had been told about his father. But he never did. Perhaps he had some faint recollection of the man who played with him in the old days in France. He certainly remembered the stories his nurses had told

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of his father's greatness, and loved his memory, and liked to think of him.

His many tutors found him a difficult pupil, especially at first. He was very obstinate, and, as he did not wish to speak German, there were many outbursts of temper to be subdued. Happily, however, he became much attached to Count Dietrichstein, who was very kind to him, and treated him with great wisdom. This was all the more fortunate, as his mother married again, after his father's death, and he saw little of her.

He admired his father so much that he was delighted when he learned that his grandfather wished him to become a soldier. It was a great day for him when he got his first uniform, though he was only made a corporal, for his tutors thought it better that he should be advanced slowly. He was a clever boy, but lazy, and promotion was held out as a reward for diligence in his studies. No pains were spared to provide him with good teachers, and to train him to be not only a good soldier but a great and good man.

He was carefully taught his profession and all the soldiers looked forward to the time when he would command them, and perhaps lead them to victory. But their hopes were not to be realized, for already his days were numbered. In the spring of 1832 he fell ill, and on the twenty-second of July, he died. When the news of his death was heard in France, it caused scarcely a ripple of interest. France had forgotten him.

NAPOLEON'S SON, THE CHILD KING OF ROME, WHOM FRANCE FORGOT

THE NEXT STORIES ARE ON PAGE 393.

THE REAL DISCOVERER OF AUSTRALIA

This picture shows Captain Cook landing in Tasmania. He was a farm labourer's son, who ran away to sea and became a sailor. None of the men who had been to Australia before him had realised the fruitfulness of the country, but Captain Cook found that there were in it fair and beautiful lands, and he called the land he saw New South Wales, and claimed it all for England. The little pictures at the bottom show the kind of men and women Captain Cook found in Tasmania when he landed there.

WHAT THIS STORY TELLS US

THIS story of the discoverers tells us of Australia. Like the great continent of Africa, Australia, the greatest island in the world, was unknown for hundreds and thousands of years. When men began to sail round the world and first saw the Australian coast, it looked such a terrible land that they dared not enter it, and for years men knew only the coast and nothing at all of the real country. We read here of the men who first explored the coast and made known to the people the great and beautiful country which lies beyond. There are no sadder stories anywhere than the stories of the sufferings of the men who traveled through the great deserts to make Australia known to the world.

THE MEN WHO FOUND AUSTRALIA

CONTINUED FROM P. 302

DO you remember what Alice said to herself as she was falling down the rabbit-hole in Wonderland?

"I wonder if I shall fall right *through* the earth," she said. And then she thought how funny it would be to come out on the other side of the world.

"I shall have to ask what the name of the country is," she thought. "I shall have to say: Please, ma'am, is this New Zealand or Australia?" Then she thought people would think her a stupid little girl for not knowing.

So she hoped very much that if she did fall right through the earth to the other side she would see the name of the country written up somewhere.

If Alice had not been dreaming she would never have thought such a funny thing. Fancy seeing a sign-post put up to say: "This is Australia!" Countries do not put up signs like that. They have their names on maps; that is all.

But Australia's name has not been very long on the map. After Columbus had discovered America, in 1492, almost one hundred years had to pass away before white men knew that there was such a place in the world as Australia. Is not that a strange thing to think of to-day? It seems as strange as if you knew all about the grass on one side of your garden, yet did not know that there was a great apple tree on the other side of it.

England and Scotland, and Wales and Ireland, all seem big places, but, just think of it, if you joined these countries together, and tried to make them as big as Australia, you would want twenty-five times as much land as there is in the whole of England, Scotland, Wales, and Ireland. And yet for thousands and thousands of years men never knew that there was an Australia in the world. Even to-day there are some parts of it into which white men have never been.

You see, we live on one side of the world and Australia is on the other side, and that is a very long way. Men had not got steamships then; they had to go about the ocean in sailing vessels. If the wind helped them all the time they would get to Australia in about seven months. If the wind did not help them it would take longer. So it was not until the year 1522 that men from Europe first saw Australia. These men were sailors from Portugal. They saw a rocky coast—the western coast it was—and as they did not think it looked a nice place they did not trouble to stay. Dutch sailors in other ships afterwards saw what the Portuguese had seen, and they sailed along the same coast, trying to find better land. In this way

they got an idea of what the coasts were like on the west and on the south and on the north of Australia. None of them liked it much better than the white men who first saw it. Still, the Dutch thought they had better give it a name, so, although they did not know what the country really was, they called it New Holland, after their own land.

The first Englishman to see Australia was named William Dampier. He had been a great pirate. Many men who went out in ships in those days were pirates, and Dampier was no worse than other men, for then it was not thought wicked to capture other people's ships and take all that was in them. When Dampier went to Australia, in 1699, he was not a pirate. He was a brave man, but he was not the right sort of man to lead others. He made a better servant than a master, so when he first saw Australia he was acting as pilot of a ship. The part of Australia that he saw was the land lying along the north-west coast.

We must remember Dampier for that, and for one other thing. The other thing was this: he guided the ship which went to the desert island and brought back Robinson Crusoe. There really was a Robinson Crusoe, but his proper name was Alexander Selkirk; and it was Dampier who enabled him to get away from the desert island.

By this time men knew something about three of the coasts of Australia. Not one of them ever thought that white men would go to live there. Australia seemed different from every other place in the world. They could not find any rivers in it. Then the living creatures of Australia were so strange and the people were savages. Here they were in this great, lonely land, wearing no clothes, talking in a way which nobody but themselves could understand, living just the sort of lives which the savages lived thousands of years ago.

There were no deer or cattle. Big birds there were, to be sure, but these could not fly. There was an animal which laid eggs, just as the monsters which lived millions and millions of years ago used to do; and there were other animals which carried their babies in pouches growing in their own skins. It seemed a strange and terrible land, and all so wild and rocky.

It was not until 1770 that the world learned that Australia has its beautiful places. A farm labourer's son found it out. His name was James Cook. He had run away to sea, and had proved so brave and honest, and good and clever, that by this time he had worked himself up to be a lieutenant in the Navy. He had been on a long voyage, and on his way home he explored and sailed all round the coast of New Zealand, which was the first time any man had done it. Then he struck out into the unknown sea, and came to the east coast of Australia. Here was a surprise. He saw nothing of the rocky wildernesses which had been found on the other coasts. Here on this coast he saw before him fair and beautiful

THE PIRATE WHO RESCUED ROBINSON CRUSOE

William Dampier, the first Englishman who saw Australia watching the natives throw the boomerang, the strange "stick" so cleverly thrown that it comes back to the place from which it starts. Dampier was a pirate, but a brave man, and it was he who rescued the real Robinson Crusoe from the desert island.

This is the kind of country that frightened the first explorers of Australia. None of them thought that white men could ever live there. It was a wild and rocky land, with strange animals and savage people.

lands. He sailed all along the east coast. It reminded him of home, so he called the land he saw New South Wales, and claimed all of it for England.

When it was found that Australia was a land in which white men could live, the British Government began to send people there. In those days men and women were severely punished for doing wrong, so the prisons in England were always crowded. To get rid of many of these poor people the Government sent them across the sea as far away from England as possible, and they sent them to Australia. They settled down in Botany Bay, where the great city of Sydney was afterwards built. They had nothing to eat except what was brought in the ships from England, and for twenty years they had a very hard life, and were often nearly starving. They never thought of going inland to find pastures for cattle and places to grow corn. They kept near the coast, and could not imagine what lay behind the great Blue Mountains at their backs.

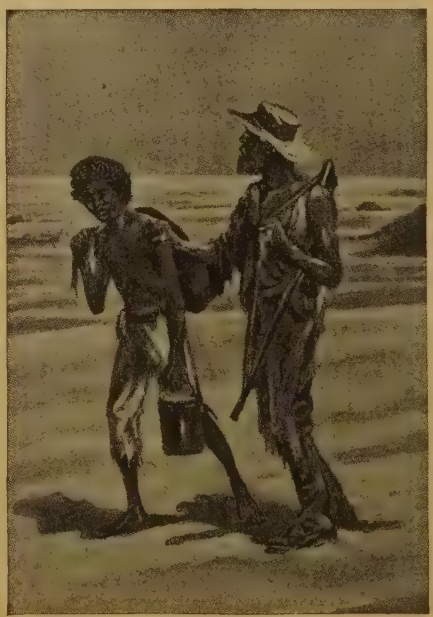
It took a long time to get to the other side of those mountains. Many men tried and failed, but at last, after twenty-five years, three men, named Wentworth, Blaxland, and Lawson, were driven by despair to fight their way over them. Their cattle were starving, for there had been no rain. These three men thought that they might as well die while making a fight for life as die where they were. The mountains were nearly 4,000 feet high, with deep precipices; but at last they crossed a high ridge which faced them at the top, and there below them lay glorious green pastures and a rushing river. They had, for the first time, seen over the Blue Mountains; for the first time they knew that there was more of the land than the little shelf of it on which for twenty-five years they had been forced to dwell. That was the beginning of the exploration of the interior of Australia.

More and more people were arriving in Australia now, and the way over the mountains was very important. A thoughtful governor made roads over them, and the way was open into the interior. But that was only a little of the work to be done. They wanted now to know a lot more about the land. They wanted homes away from the spot where the outcasts of the prisons had been placed.

While men were struggling along over the land, a daring young fellow, named Matthew Flinders, and his friend, a man named Bass, were getting to know more about the sea-coast. Flinders would never have seen Australia had he not read "Robinson Crusoe." That made him wish to go to sea, and he studied

all about navigating and the making of charts, and when at last he went to Australia he set about exploring the coast. He was able to show that Tasmania is not part of Australia, as was then supposed, but a separate island. He did more than that. He made quite sure that Australia itself is an island, the biggest island in the world; for, little by little, he sailed all round it. On his way home he was taken prisoner, and not allowed to return to England for nearly seven years. The French who captured him stole the maps which he had made and the papers he had written, and printed them, pretending that they were their own and that they had made the discoveries.

The worst part of the work in Australia had still to be done. This was the exploring of the land itself. In some ways it was harder work than the explorers of Africa had had to do. There were no savage beasts, but there were savage men, who attacked the explorers and set fire to the grass and reeds, destroying the food for the horses and bringing the men into great peril. But worse still were the great stony deserts and the want of water. It would take many books to tell how men toiled and died to find their way about the interior of Australia. Their sufferings were terrible. We can only study a few cases.



This picture shows Edward John Eyre and his servant ending an exploring journey through an Australian desert, almost exhausted.

We must remember that Australia is a country of nearly 3,000,000 miles, and that, when the parties set out, they did not know whether there were rivers or lakes in the interior. They hoped that they would find both, of course, and some believed that they would find a great inland sea like the Mediterranean. Lieutenant Oxley made several journeys, and once traveled 800 miles, looking for the sea which was not there. His friend, a man named Cunningham, who was afterwards killed by the natives, found a river, but nothing important was done until Captain Charles Sturt set out. He had convicts with him, but they bravely went wherever he led, though they suffered greatly.

The heat was so terrible that the screws which held his boxes together became loose and fell out; his comb was split into thin plates; the lead of his pencil dropped out, and his finger-nails were so baked that they snapped like pieces of glass. But in spite of this he made some splendid journeys. In some years heavy rains make great lakes and marshes on the plains of Australia, and in other years, when there is no rain, these marshes are burnt dry. Sturt found the plains in a dry year. The result was that reeds which had grown like forests—some of the nettles are fifty feet high—were so hard that it was impossible for him to force his way through them. But he found a great river and called it the Darling. Altogether he explored 2,000 miles of country. So great were his sufferings that in the end he went blind.

His faithful friend and follower was John McDouall Stuart, who, after he had been out with Sturt, made three grand marches of his own. It took him a long time, but in the end he marched right from the south of Australia to the north. Starting from the shore of the sea in the south, he finished on the shore of the sea in the north. He was the first man in the world to do this. It was a very important work that he did, for, wherever he went, he made maps for others to follow, and afterwards it was by the very path that he took that the telegraph lines from one side of Australia to the other were laid.

He and his men suffered from want

of food and more often from want of water. Once, when they were nearly dying of thirst, they came to a river which flowed at the bottom of some steep rocks. They rushed down to drink, but when they reached the water they found that it was salt as the sea, and so were many of the lakes. The water collects after the rain in great hollows, where tons and tons of salt lie. Some of the horses went mad from thirst, and one nearly killed Stuart. Another horse trod on him, breaking the bones of his right hand, so that he was unable again to use it. But with that broken hand he made his greatest march.

Through want of food and water he became very ill, and at one time his mouth was so sore that he could not swallow. Savages tried to kill him. But in spite of everything he kept on and on, until at last he came to the end of his journey and saw the sea from the land—the sea on the coast opposite to that from which they had started. They looked out at the sea from the land upon which Dampier had looked from the sea all those years before.

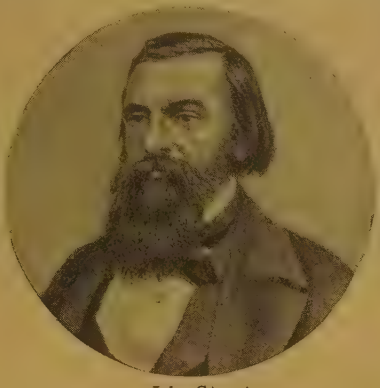
Before Sturt was able to complete his work, Edward John Eyre made several attempts to learn more about the country. He had a good farm and many sheep, and he was a magistrate, but he gave up his home life to go into the wilds.

He believed that men could go on foot along the desert ways lying along the coast of the very big bay called the Great Australian Bight. If you look at a map you will see Spencer Gulf, in the south of South Australia. It was from there that he started. Now run your eye along to the west, almost to the far edge of the south coast of West Australia. Then you will see King George Sound, where his journey ended.

The country was so bad all the way that to travel so far and so long was most heroic, and when people in England heard about what Eyre had done they gave him a splendid medal.

He explored inland, too, and discovered Lake Torrens. He thought it was a great sea, because he found it in a rainy year, when the lake reached far and wide. Eyre made his greatest journey, along the Bight, in 1841, and lived for sixty years afterwards.

Matthew Flinders



John Stuart

Captain Sturt

These three men were among the earliest and bravest explorers of Australia. Matthew Flinders sailed all around the continent, the biggest island in the world. Captain Sturt found the great River Darling and explored 2,000 miles of country, suffering so greatly that he went blind. John Stuart was the first man to march across Australia from south to north, making maps.

Many men were traveling now, and sad was the fate of several of them. Some have never been heard of since. The most terrible story is that of the Burke and Wills expedition. These two men set out with camels and men and provisions, with good hopes of success. But from the beginning everything went wrong. In order to move with more speed they divided up the party, so that the leaders could first find a way. Most of the camels and provisions were left, while eight of the party went on. Then these waited while a man was sent back to fetch the others. The man sent back was a long time away, so Burke said he would go on without him. He left

all the spare provisions, and then took Wills and two of the men, with six camels and two horses, and provisions for three months, and set out again.

They reached the sea-shore, but had to hurry back because their food was running short. One of the men died, and when the three got back to where they had left the second party, nobody was there.

They had gone to a better camping-place far away, on the very day that Burke and Wills returned.

Burke and Wills were too ill to follow them, so they tried to get home by another way, hoping that they might find water on the march. Wills, who had written an account of their travels, buried his books at the camp before leaving, but took with him one book, in which to write the further story of their doings. The man with them strayed away, and was rescued by some kind natives, but Burke and Wills wandered on and on, lost in the dreadful desert. Their clothes were worn to rags. They had nothing to protect them from the heat of the sun by day, nothing to keep off the cold at night. All their food and water were gone.

Wills wrote his last word in the diary, saying that they were starving and near death. There was no word of complaint in his book. He lay down in the desert when the time came, and died like the brave man he was. Burke died the next day.

The man who had been saved by the natives was able in time to get back to his home. Then people were sent out far and near to seek the two poor men in the wilderness. But it was too late. Their bones were found, and the people who had gone to find them brought them back to their home and buried them with honors, with a monument over them, to tell what they had done and suffered in exploring the deserts of Australia. They brought with them also the diary in which the men had written their story, the book being found buried according to the writing on a tree.

THE NEXT STORY OF MEN AND WOMEN IS ON PAGE 435.

THE LAST DAYS OF BURKE AND WILLS, LOST IN THE AUSTRALIAN DESERT

The story of Burke and Wills is the saddest in the discovery of Australia. They were lost in the desert, their clothes worn to rags, and with neither food nor water. They wrote the story of their sufferings in a diary, and lay down and died. Notice the camels, and the writing on the tree, to show where their books and papers were buried. Their bodies were found and brought back by a party of searchers sent to look for them. A monument was erected to their memory in the city of Melbourne, and their names are held in remembrance, by the people of Australia, among those of the brave men who laid the foundations of the Commonwealth.

This picture, by John Longstaff, has been bought by the Government of New South Wales.

WHAT WE SHOULD KNOW OF POETRY

IN this part of our book we shall learn not only the best poems, but many things that we should know about poetry: the various kinds of verse, the differences between the poetry of the great poets, the old poetry and the new poetry, and so on. We can understand great poems without knowing all about the different styles of poetry, just as we can understand a steam-engine without knowing the names of all its parts, but we ought to know something about the kind of literature we are reading, and these little lessons in poetry will help us better to understand the full purpose of the poet and the full meaning of the poem.

THE DIFFERENT KINDS OF VERSE

CONTINUED FROM P. 105

ONLY a very few of the forms of verse need be explained or illustrated here; but these few are important, as you will understand what is meant by them, when their names occur in other reading, if you learn them now.

Strictly speaking, a single line of poetry is a verse, but usually any number of lines over two are called a verse; three, four, five, six, even twenty lines, or more, may be a verse.

Verses in poetry are like steps in a stair; they ought to lead on to the end. Each verse should take us a step nearer the end of the poem. Look, for instance, at "The Battle of Blenheim," on page 545, and you will see it has eleven verses, each of six lines, and each verse moves the story on a step. In "The Wind in a Frolic," on page 374, there are verses of different lengths. Another name for a verse is a stanza.

Short verses of only two lines, or any pair of lines ending with the same rhyme occurring in a longer verse, are called couplets. This is a couplet:

> Twinkle; twinkle, little star;
> How I wonder what you are!

Any four rhymed lines of poetry form a quatrain. The verses in "Queen Mab," page 1156, are quatrains. We have already learned what lyric poetry is. You will remember that it is chiefly poetry which is capable of being sung, as it began by men composing verses to sing to the accompaniment of a harp or lyre. There are, however, many divisions of lyric poetry, and much of it could not be set to music. A very popular form is called the sonnet. This is the most beautiful style of all the smaller poems, but it is not very suitable for poetry that would interest children. A sonnet must have fourteen lines, neither more nor less. Some of our finest poetry is in the form of these little fourteen-line poems.

The elegy is another form of lyric poetry, and was originally a funeral poem. Hence, any poem about the death of a great man is called an elegy, especially if it mourns for his death. But a solemn poem expressing the sadness of life may also be considered an elegy, like the famous "Elegy written in a Country Churchyard," which will be printed in due course in our pages.

The ode, the psalm, and the hymn are also other forms of lyric poetry. The ode was originally meant to be sung, and may be called a song of praise addressed to a great man, to a great nation, or to anything living or dead that can be "addressed" in a poetic way; for instance, "An Ode to Spring." Odes are not now written to be sung; but, of course, psalms are meant for singing, and hymns also.

There are a great many other kinds of poetry; but we need not trouble our young heads with more than these, as the verses we shall print in this book will be, for the most part, simple in form.

THE PIED PIPER OF HAMELIN

By ROBERT BROWNING

THERE is a real town in Germany called Hameln, and it is said that a strange man once charmed all its rats away, in the summer of the year 1284. But legend also says he charmed the children away because the Mayor and townsmen did not keep their promise to pay him. This old, old story was put into verse by the great poet Robert Browning, and surely no finer children's poem was ever written.

1.

HAMELIN Town's in Brunswick,
By famous Hanover city;
The river Weser, deep and wide,
Washes its walls on the southern side.
A pleasanter spot you never spied,
But, when begins my ditty,
Almost five hundred years ago,
To see the townsfolk suffer so
From vermin, was a pity.

2.

Rats!
They fought the dogs, and killed the cats,
And bit the babies in the cradles,
And ate the cheese out of the vats,
And licked the soup from the cook's own ladles,
Split open the kegs of salted sprats,
Made nests inside men's Sunday hats,
And even spoiled the women's chats,
By drowning their speaking
With shrieking and squeaking
In fifty different sharps and flats.

3.

At last the people in a body
To the Town Hall came flocking:
"'Tis clear," cried they, "our Mayor's a noddy;
And as for our Corporation—shocking
To think we buy gowns lined with ermine
For dolts who can't or won't determine
What's best to rid us of our vermin!
You hope, because you're old and obese,
To find in the furry civic robe ease?
Rouse up, sirs! Give your brains a racking
To find the remedy we're lacking,
Or, sure as fate, we'll send you packing!"
At this the Mayor and Corporation
Quaked with a mighty consternation.

4.

An hour they sat in council;
At length the Mayor broke silence:
"For a guilder I'd my ermine gown sell;
I wish I were a mile hence!
It's easy to bid one rack one's brain—
I'm sure my poor head aches again,
I've scratched it so, and all in vain.
Oh, for a trap, a trap, a trap!"
Just as he said this, what should hap
At the chamber door but a gentle tap?
"Bless us!" cried the Mayor, "what's that?"
(With the Corporation as he sat,
Looking little though wondrous fat;
Nor brighter was his eye, nor moister
Than a too-long-opened oyster,
Save when at noon his paunch grew mutinous
For a plate of turtle green and glutinous).
"Only a scraping of shoes on the mat?
Anything like the sound of a rat
Makes my heart go pit-a-pat!"

5.

"Come in!" the Mayor cried, looking bigger:
And in did come the strangest figure!
His queer long coat from heel to head
Was half of yellow, and half of red;
And he himself was tall and thin,
With sharp blue eyes, each like a pin,
And light, loose hair, yet swarthy skin,
No tuft on cheek nor beard on chin,
But lips where smiles went out and in;
There was no guessing his kith and kin:
And nobody could enough admire
The tall man and his quaint attire.
Quoth one: "It's as my great-grandsire,
Starting up at the Trump of Doom's tone,
Had walked this way from his painted tombstone!"

6.

He advanced to the council-table:
And, "Please your honours," said he, "I'm able,
By means of a secret charm, to draw
All creatures living beneath the sun,
That creep or swim or fly or run,
And after me so as you never saw!
And I chiefly use my charm
On creatures that do people harm,
The mole and toad and newt and viper;
And people call me the Pied Piper."
(And here they noticed round his neck
A scarf of red and yellow stripe,
To match with his coat of the self-same check;
And at the scarf's end hung a pipe,
And his fingers, they noticed, were ever straying
As if impatient to be playing
Upon his pipe as low it dangled
Over his vesture so old-fangled.)
"Yet," said he, "poor piper as I am,
In Tartary I freed the Cham
Last June, from his huge swarm of gnats;
I eased in Asia the Nizam
Of a monstrous brood of vampyre-bats:
And, as for what your brain bewilders,
If I can rid your town of rats,
Will you give me a thousand guilders?"
"One? Fifty thousand!" was the exclamation
Of the astonished Mayor and Corporation.

7.

Into the streets the piper stept,
Smiling first a little smile,
As if he knew what magic slept
In his quiet pipe the while;
Then, like a musical adept,
To blow the pipe his lips he wrinkled,
And green and blue his sharp eyes twinkled
Like a candle flame where salt is sprinkled;
And ere three shrill notes the pipe uttered,
You heard as if an army muttered;
And the muttering grew to a grumbling;

From street to street he piped advancing,
And step for step they followed dancing,

Until they came to the river Weser,
Wherein all plunged and perished.

And the grumbling grew to a mighty rumbling,
As out of the houses the rats came tumbling.
Great rats, small rats, lean rats, brawny rats,
Brown rats, black rats, grey rats, tawny rats,
Grave old plodders, gay young friskers,
Fathers, mothers, uncles, cousins,
Cocking tails and pricking whiskers,
Families by tens and dozens,
Brothers, sisters, husbands, wives—
Followed the piper for their lives.
From street to street he piped advancing,
And step for step they followed dancing,
Until they came to the river Weser,
Wherein all plunged and perished—
Save one who, stout, as Julius Cæsar,
Swam across and lived to carry
(As the manuscript he cherished)
To Rat-land home his commentary:
Which was, "At the first shrill notes on the pipe,
I heard a sound as of scraping tripe,
And putting apples, wondrous ripe,
Into a cider-press's gripe:
And a moving away of pickle-tub boards,
And a leaving ajar of conserve-cupboards,
And a drawing the corks of train-oil flasks,
And a breaking the hoops of butter-casks:
And it seemed as if a voice
(Sweeter far than by harp or by psaltery
Is breathed) called out, 'Oh rats, rejoice!
The world is grown to one vast drysaltery!
So munch on, crunch on, take your nuncheon,
Breakfast, supper, dinner, luncheon!'
And just as a bulky sugar-puncheon,
All ready staved, like a great sun shone
Glorious scarce an inch before me,
Just as methought it said, 'Come bore me!'
—I found the Weser rolling o'er me."

8.

You should have heard the Hamelin people
Ringing the bells till they rocked the steeple;
"Go," cried the Mayor, "and get long poles!
Poke out the nests and block up the holes!
Consult with carpenters and builders,
And leave in our town not even a trace
Of the rats!"—when suddenly, up the face
Of the Piper perked in the market-place,
With a "First, if you please, my thousand guilders!"

9.

A thousand guilders! The Mayor looked blue;
So did the Corporation too.
For Council dinners made rare havoc
With claret, moselle, vin-de-grave, hock;
And half the money would replenish
Their cellar's biggest butt with Rhenish.
To pay this sum to a wandering fellow
With a gipsy coat of red and yellow!
"Beside," quoth the Mayor, with a knowing wink,
"Our business was done at the river's brink.
We saw with our eyes the vermin sink,
And what's dead can't come to life, I think.
So, friend, we're not the folks to shrink
From the duty of giving you something to drink,
And a matter of money to put in your poke;
But, as for the guilders, what we spoke
Of them, as you very well know, was in joke.
Beside, our losses have made us thrifty.
A thousand guilders! Come, take fifty!"

10.

The Piper's face fell, and he cried:
"No trifling! I can't wait, beside!
I've promised to visit by dinner-time
Bagdad, and accept the prime
Of the head cook's pottage, all he's rich in
For having left, in the Caliph's kitchen,
Of a nest of scorpions no survivor:
With him I proved no bargain driver,
With you, don't think I'll bate a stiver!
And folks who put me in a passion

May find me pipe after another fashion."
"How?" cried the Mayor, "d'ye think I'll brook
Being worse treated than a cook?
Insulted by a lazy ribald
With idle pipe and vesture piebald?
You threaten us, fellow? Do your worst,
Blow your pipe there till you burst!"

11.

Once more he stept into the street
And to his lips again
Laid his long pipe of smooth straight cane;
And ere he blew three notes (such sweet
Soft notes as yet musician's cunning
Never gave the enraptured air)
There was a rustling that seemed like a bustling
Of merry crowds justling at pitching and hustling,
Small feet were pattering, wooden shoes clattering,
Little hands clapping, and little tongues chattering;
And, like fowls in a farmyard when barley is scattering,
Out came the children running.
All the little boys and girls,
With rosy cheeks and flaxen curls,
And sparkling eyes and teeth like pearls,
Tripping and skipping, ran merrily after
The wonderful music with shouting and laughter.

12.

The Mayor was dumb, and the Council stood
As if they were changed into blocks of wood,
Unable to move a step or cry
To the children merrily skipping by,
Could only follow with the eye
That joyous crowd at the piper's back.
But how the Mayor was on the rack,
And the wretched Council's bosoms beat,
As the piper turned from the High Street
To where the Weser rolled its waters
Right in the way of their sons and daughters!
However, he turned from South to West,
And to Koppelburg Hill his steps addressed.
And after him the children pressed;
Great was the joy in every breast.
"He can never cross that mighty top!
He's forced to let the piping drop,
And we shall see our children stop!"
When, lo, as they reached the mountain-side,
A wondrous portal opened wide,
As if a cavern was suddenly hollowed;
And the piper advanced and the children followed.
And when all were in to the very last,
The door in the mountain-side shut fast.
Did I say all? No! One was lame,

**Out came the little children running—
All the little boys and girls,
With rosy cheeks and flaxen curls,
And sparkling eyes and teeth like pearls,
Tripping and skipping, ran merrily after
The wonderful music with shouting and laughter.**

And could not dance the whole of the way;
And in after years, if you would blame
His sadness, he was used to say:
"It's dull in our town since my playmates left.
I can't forget that I'm bereft
Of all the pleasant sights they see,
Which the piper also promised me.
For he led us, he said, to a joyous land,
Joining the town and just at hand,
Where waters gushed and fruit-trees grew,
And flowers put forth a fairer hue,
And everything was strange and new.
The sparrows were brighter than peacocks here,
And their dogs outran our fallow deer,
And honey-bees had lost their stings,
And horses were born with eagles' wings:
And just as I became assured
My lame foot would be speedily cured,
The music stopped and I stood still,
And found myself outside the hill,
Left alone against my will,
To go now limping as before,
And never hear of that country more!"

13.

Alas, alas for Hamelin!
There came into many a burgher's plate
A text which says, that heaven's gate
Opes to the rich at as easy rate
As the needle's eye takes a camel in!
The Mayor sent East, West, North, and South,
To offer the Piper, by word of mouth,
Wherever it was men's lot to find him,
Silver and gold to his heart's content,
If he'd only return the way he went,
And bring the children behind him.
But when they saw 'twas a lost endeavour,
And Piper and dancers were gone for ever,
They made a decree that lawyers never
Should think their records dated duly
If, after the day of the month and year,
These words did not as well appear:
"And so long after what happened here
On the twenty-second of July,
Thirteen hundred and seventy-six;"
And the better in memory to fix
The place of the children's last retreat,
They called it the Pied Piper's Street—
Where any one playing on pipe or tabor
Was sure for the future to lose his labour.
Nor suffered they hostelry or tavern
To shock with mirth a street so solemn,
But opposite the place of the cavern
They wrote the story on a column,
And on the great church window painted
The same, to make the world acquainted
How their children were stolen away;
And there it stands to this very day.
And I must not omit to say
That in Transylvania there's a tribe
Of alien people who ascribe
The outlandish ways and dress
On which their neighbours lay such stress,
To their fathers and mothers having risen
Out of some subterranean prison
Into which they were trepanned
Long time ago in a mighty band
Out of Hamelin town in Brunswick land,
But how or why, they don't understand.

14.

So, Willy, let you and me be wipers
Of scores out with all men—especially pipers;
And, whether they pipe us free from rats or from mice,
If we've promised them aught, let us keep our promise!

THE VILLAGE BLACKSMITH

Few poems have had greater popularity than this fine, manly description of simple village life, by Henry Wadsworth Longfellow, the great American poet. The life of a rural village is much the same in all civilized countries, but in America, in the old days, the New England villages were just copies of fine old English villages.

UNDER a spreading chestnut tree
The village smithy stands;
The smith, a mighty man is he,
With large and sinewy hands;
And the muscles of his brawny arms
Are strong as iron bands.

His hair is crisp, and black, and long,
His face is like the tan;
His brow is wet with honest sweat,
He earns whate'er he can;
And looks the whole world in the face,
For he owes not any man.

Week in, week out, from morn till night,
You can hear his bellows blow;
You can hear him swing his heavy sledge,
With measured beat and slow,
Like a sexton ringing the village bell,
When the evening sun is low.

And children coming home from school
Look in at the open door;
They love to see the flaming forge,
And hear the bellows roar,
And catch the burning sparks that fly
Like chaff from a threshing-floor.

He goes on Sunday to the church,
And sits among his boys;
He hears the parson pray and preach,
He hears his daughter's voice
Singing in the village choir,
And it makes his heart rejoice.

It sounds to him like her mother's voice,
Singing in Paradise!
He needs must think of her once more,
How in the grave she lies;
And with his hard, rough hand he wipes
A tear out of his eyes.

Toiling—rejoicing—sorrowing,
Onward through life he goes;
Each morning sees some task begun,
Each evening sees its close;
Something attempted, something done,
Has earned a night's repose.

Thanks, thanks to thee, my worthy friend,
For the lesson thou hast taught!
Thus at the flaming forge of Life
Our fortunes must be wrought;
Thus on its sounding anvil shaped
Each burning deed and thought!

THE WIND IN A FROLIC

By WILLIAM HOWITT

THE wind one morning sprang up from sleep,
Saying, "Now for a frolic! now for a leap!
Now for a madcap galloping chase!
I'll make a commotion in every place!"

SO it swept with a bustle right through a great town,
Cracking the signs and scattering down
Shutters; and whisking, with merciless squalls,
Old women's bonnets and gingerbread stalls.
There never was heard a much lustier shout
As the apples and oranges trundled about;
And the urchins that stand with their thievish eyes
For ever on watch, ran off each with a prize.

THEN away to the field it went blustering and humming,
And the cattle all wondered whatever was coming;
It plucked by the tails the grave matronly cows,
And tossed the colts' manes all over their brows;
Till, offended at such an unusual salute,
They all turned their backs, and stood sulky and mute.

SO on it went capering and playing its pranks,
Whistling with reeds on the broad river's banks,
Puffing the birds as they sat on the spray,
Or the travellers grave on the king's highway.
It was not too nice to hustle the bags
Of the beggar, and flutter his dirty rags.

'TWAS so bold that it feared not to play its joke
With the doctor's wig or the gentleman's cloak.
Through the forest it roared, and cried gaily, "Now,
You sturdy old oaks, I'll make you bow!"
And it made them bow without more ado,
Or it cracked their great branches through and through.

THEN it rushed like a monster on cottage and farm,
Striking their dwellers with sudden alarm;
And they ran out like bees in a midsummer swarm.
There were dames with their kerchiefs tied over their caps,
To see if their poultry were free from mishaps;
The turkeys they gobbled, the geese screamed aloud,
And the hens crept to roost in a terrified crowd;
There was rearing of ladders and logs laying on,
Where the thatch from the roof threatened soon to be gone.

BUT the wind had swept on, and had met in a lane
With a schoolboy, who panted and struggled in vain;
For it tossed him and twirled him, then passed, and he stood
With his hat in a pool and his shoes in the mud.

THEN away went the wind in its holiday glee;
And now it was far on the billowy sea,
And the lordly ships felt its staggering blow,
And the little boats darted to and fro.
But lo! it was night, and it sank to rest
On the sea-birds' rock in the gleaming west;
Laughing to think, in its fearful fun,
How little of mischief it really had done.

WHAT THIS STORY TELLS US

LIFE must have begun in the sea. We have seen that life of any kind must have food to support it, and until the seas were made there could be no food for life at all. For life of any kind must have water—nothing in the whole earth can live without water. The great waters, which cover nearly three parts of the earth, are crowded with life—the bottom of the sea is a carpet of living things, growing and dying, growing and dying, far from the eyes of men. Yet life can never become important in the sea, for life needs oxygen, and there is very little oxygen in the sea. The first living things must have swum ashore—helped, perhaps, by the moon, which makes the tides, so that life, washed ashore by one tide and carried back by another, could grow used to the land without a sudden change. On the land, life found the oxygen it needed, and all the progress of life has been made on the land.

HOW LIFE CAME OUT OF THE SEA

CONTINUED FROM P. 285

WE know for certain that there was a time in the story of the earth when there was no life whatever upon it. We know this because, as we see in another part of this book, the earth was once far too hot for any living thing. Now, in our story of life, which leads up to the story of our own lives, we have plainly to make a beginning just at that very time when life first appeared upon the earth, which, up till then, had shown no life at all; and I think we shall see that this is a very interesting story.

Now, to begin with, what was it that life wanted in order that it might exist at all? Well, we know that all living things must have food of certain kinds. We know also that all animals, large or small, require the help of the plants to prepare their food for them; but plants can make use of the simplest things in air and water and earth. Undoubtedly the plants, then, come first, and so far as the need of food was concerned they might have come long before they did, for the simple things that they required had long been on the earth. But there was one thing which they needed, and which, until this time, could not be supplied them; and that all-important thing was simply water.

Now, before we can understand this, we must remind ourselves that there are three different states in which water may exist. When it is wet or liquid we call it water. If we make it very cold it turns hard and solid, and we call it ice—but it is still water just the same. On the other hand, if we put it in a kettle and boil it long enough it will all be boiled away into the air in the form of vapor, just like the other gases of the air. It cannot be seen, but it is there all the same; and, indeed, there is always some water in the form of gas in the air. Now remember that it is still water, just as ice is water, only it happens to be not wet water, but gas water; just as ice is solid water.

Now that is all very simple and easy, and we all knew it, in a way, though perhaps we had not thought about it; and no one really knows anything he has not thought about. But though it is so easy, there is no bigger or more important fact in the whole world.

For if water, when it is very hot, is not wet, but is a gas, all the water on the earth must once have been in the form of a gas. Of that there is no doubt. How long there has been water in one shape or other on the earth, no one can say; but I am quite sure that it must have been for several millions of years, ages and ages before life came. Only, before life came all this water was gas; and

it is the first fact, perhaps, of all living things, that they must have wet, or liquid, water in them. Wherever there is no liquid water there is, and can be, no life. On the earth, when it had nothing but water in the form of gas, there could be no life at all.

So, as the earth went on cooling and cooling throughout so many ages, it was always traveling slowly and steadily towards a certain fixed point, which was to make all the difference, and that was the point where the earth was just so cool that the water in the form of gas, which covered the solid part of the earth all over, began, or partly began, to become liquid, or wet. Apart from life, the difference between water as gas and water as liquid is not so very great, and it will pass from one to the other state in a moment, or back again, a billion times, and then a billion more. But so far as life is concerned, the difference between water as gas and water as liquid is this: that so long as water is only gas life is not possible, but wherever there is liquid water life *is* possible.

Though we do not know what life really is in itself, we are quite sure that, whatever it may be, it is something that happens in liquid water.

WHY ALL LIFE MUST FIRST HAVE BEGUN IN THE SEA

I do not say that life began directly the first few drops of wet water began to fall from the sky and filled the hollow places of the earth. There may have been a long time before life came; but it is certain that life did not, and could not, come before this happened. Also, there can be no doubt that when life did begin it began in the water.

The first shower of rain that ever fell upon the earth must have been made of boiling water; and the first pools that it formed must, therefore, have been very hot—much too hot for living things. Though life can live, and must live, in wet water, the water must not be too hot. All living things are killed by boiling water. But as time went on, and the earth still became gradually cooler, the water in the pools and lakes would become gradually cooler also. Perhaps by this time there was enough liquid water on the earth to make not merely pools, and ponds, and lakes, but even seas and oceans.

So one of the first men who ever thought about this, a great Frenchman called Buffon, said that probably life began in the sea somewhere in the neighborhood of the North Pole or the South Pole, because we may guess that the water in those parts, which do not get so much sunlight and heat as the rest of the earth, would become cooler first, and would be first to reach that point where the water became so cool that life could exist in it. I dare say he was quite right. At any rate, life would come first wherever the water of the earth first became cool enough.

THE LIVING CARPET SPREAD OVER THE OCEAN FLOOR

Now, just as life began in the seas, so the seas are full of life to-day. We must not forget this; we must not even think that there is no life in the seas except the fishes and a few seaweeds. The water of all the seas and oceans, which cover much more than half of the whole surface of our earth, is simply crammed with life. Though many living things have long ago left the sea and swum ashore, we must always remember that the seas, in which life began, are still crammed with life. We must also remember that the whole of the floor of the seas and oceans—much more than half of the whole surface of the earth—is thickly covered, without a break anywhere, by living things, growing and dying, growing and dying, far from the eyes of men. These form a living carpet spread without a break or a hole over the entire ocean floor, whilst the waters above them are crowded with active life of thousands and hundreds of thousands of kinds. Life was born in the ocean, and the ocean now holds and supports by far the greater number of all the living things upon our earth.

THE FIRST LIVING CREATURES TO COME INTO THE WORLD

Now, at present we are trying to tell, in the shortest way, the story of the different stages of life upon the earth: and so we shall not here say anything about what the first and simplest living things were like, but we shall go right on with the story. We shall remember merely that the first living things must really have been kinds of plants, because, being the first living things, they had nothing but the simplest kinds of food to live upon, and plants are the only

things that can live upon these simple kinds of food.

As the ages went on, the first living things gave birth to many more, and of these some differed in many ways from their parents, so that the seas would hold not only many living creatures, but many different kinds of living creatures; and amongst these, certainly, were the first forms of animal life.

THE GREAT AND WONDERFUL CHANGE WHEN LIFE CAME ASHORE

Now, at some time or other something very remarkable must have happened. Living creatures, born and bred in the sea and, like all living creatures in the past and the present, needing liquid water for their life—just like a thirsty little boy of to-day—must actually have dared to leave the sea. Now, this was a very brave and very big thing to do.

Perhaps some of them left the sea by flying up into the air above it, but I do not at all think that this was likely. Do you not see that it would mean a very sudden change and a very difficult feat? What certainly happened, and probably happened in every case, I think, was that life *swam ashore.* Now, I have put it in that way because perhaps it will help you to remember; but I am quite sure that this great event did not happen exactly like swimming ashore. I wonder whether any little boy or girl can guess how the change from the water to the land can have been made without being too sudden and without requiring that the creatures who made the change should "make up their minds" about it? For, really, you know, they had no minds to make up. Now, please do not read on any further until you have guessed.

HOW THE MOON MAY HAVE HELPED LIFE TO SWIM ASHORE

It must have been the moon, I think, that came to the help of life, and that really led to making life possible upon the land, for the moon makes the tides, and it must have been the tides that made it possible for life to swim ashore. I think this is only one instance more of the great truth that all things work together. It has not occurred to anyone, so far as I know, to suggest that the moon played a great part in helping on the story of life upon the earth, but I think it must have been so.

The tides do what nothing else could have done. They make possible the change from the sea to the land, because they prevent the change from being too sudden. We know hosts of living creatures to-day that teach us this lesson. Their proper place is in the water, and especially the shallow water near the shore. Very often they live on the rocks, and as the tides come and go they often learn to do without the water for a time until it returns. Can you not imagine how they might learn, so to speak, after a long time, to do without the water altogether, and so to live on the land? Of course, I do not mean that they or any other living things can do without water, for all life is in water, and though we should be drowned in the sea, our bodies are more than three-fourths water themselves. But I mean that these creatures could learn to live without being actually surrounded by water.

Possibly the sun helped life to swim ashore by drying up tide pools. Possibly some living creatures swam from the sea into fresh-water streams, and the sun may have helped by drying up the pools formed by freshets.

WHY LIFE HAD TO COME ASHORE TO MAKE PROGRESS

What is the real reason why life has made such little progress in the sea and so much on land? Well, before we answer that question let us remind ourselves that life *has* made very little progress in the sea. The highest kinds of living things that are natural to the sea are the fishes, and even the cleverest fishes and the biggest are very stupid and humble things. They are quite cold, like the water round them; they have scarcely any sense at all, and I am quite sure that they will never come to anything more so long as they stay in the sea.

It is true that there are certain wonderful creatures, like the whales and the seals, whose blood is warm, who live in the sea, and who, though they look like fishes, are not really fishes, but far higher, and far younger in their history. But though these live in the sea *they breathe air*, and even the cleverest whale must sometimes come to the surface to get a new supply of air. Now that, I believe, is the whole point.

As we know, every living thing must breathe or die—that is to say, it must get supplies, and always fresh supplies, of the gas called oxygen. Now, the rate at which it gets and uses up oxygen decides the rate at which it lives and the amount that it can do in the way of living. The rate at which it can get oxygen depends, of course, upon the amount of oxygen that is there to be got—that is plain enough.

How the breath of life is carried to the bottom of the sea

Now, though life began in the water and lived for many ages in the water when there was none anywhere else, it could never make any more progress in the water than is allowed by the very small amount of oxygen that water contains; just as, if you only have a very little money, and cannot make or get any more, there must plainly be a limit to the amount of spending that you can do. Life in the water went on for ages and ages learning, better and better, how to "make the most" of the oxygen that is in it. And when it had learnt how to make the most of that oxygen, it could make no more.

The whole of the small amount of oxygen in sea-water—which, though small, supports so much life—is got from the air. Thus, there is a fair supply of oxygen near the surface of the water, which is next the air, and much less down below. It is believed that the oxygen which supports life at the bottom of the deep oceans is carried there in streams of cold water, which were once near the surface in the cold regions of the earth, and which, as they are carried to the warmer regions, sink down and down, carrying the necessary oxygen to the life in the depths.

How the first living things may have come ashore slowly

Now, if we think about it, we shall see that the waters near the shores of the seas which are very shallow, and which the tides are constantly spreading out into thin layers—which will wet your feet unless you are careful—must really be the best off in the way of oxygen. And that, we may be sure, is the reason why there is so much life of so many kinds in the waters and upon the rocks of the shore; and it would be the creatures which were accustomed to a good supply of oxygen that at last would learn to—"make the plunge," I was going to say, only it was a plunge not into the water, but out of it into the great ocean of air.

Now, whilst the amount of oxygen in water is, at best, only a tiny gift from the amount of oxygen that is in air, the oxygen in the air is actually one-fifth part of the whole air, so that the difference between water and air in this respect is like the difference between bitter poverty and boundless wealth.

So life was abundantly rewarded for the great step from the water to the land. I have no doubt that times were hard at first, because the arrangements which do very well for breathing oxygen in water are of no use at all for breathing oxygen in air. That is very strange, and yet we all know it very well, for we know that when a fish is taken out of water it dies, and though it is surrounded by far more oxygen than it has ever known before, it actually dies for want of oxygen—that is to say, it is suffocated. It has no lungs, you see, but only what are called gills, which are arrangements for filtering oxygen out of water which contains it.

The great step was taken and life began its wonderful march

So, as I say, when life first came ashore it had to learn how to invent lungs which would enable it to use the oxygen of the air. Without these lungs life would die in the midst of plenty, just as the fish does, dying for want of oxygen in the midst of a boundless amount of it.

This great difficulty was got over, however, in one way and another, and we have already seen how the tides came to the help of life by giving it opportunities to learn how to breathe air when the tide was out, and coming to its rescue with water when the tide was in. And so, after a long time, and very many failures, the great step was taken; for whilst much life remained in the water, and remains in the water to this day—for there are as good fish in the sea as ever came out of it—yet all the great, high, and wonderful stages in the story of life came after this time and are stages in the story of life on land. This is the subject we must now go on with.

THE NEXT PART OF THIS STORY BEGINS ON PAGE 571.

THE BOOK OF WORK AND PLAY

ALL work and no play makes Jack a dull boy—and Jill a dull girl. Healthy play is natural and necessary for us all, and when school is over it is right that we should go merrily to our games. We shall learn here how to play them. We shall learn, also, many other things. It is remarkable what we can do at home when rain drives us indoors and the long winter evenings come, and we shall discover hundreds of ways of amusing ourselves and making use of our hands. We shall learn how to make wonderful things with cardboard and paper and other materials. The boy will learn what to do with his little box of tools, and the girl what to do with her needle and her clever fingers. Magical illusions, conjuring tricks, puzzles, problems, and simple scientific experiments will fill our pages and give us an entertainment of which we shall never grow tired.

CONTINUED FROM PAGE 256

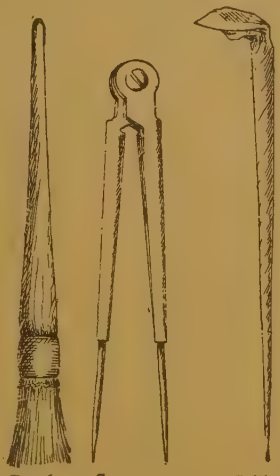
AN ENGLISH MODEL TOWN VILLAGE

A WONDERFUL WORK FOR BOYS AND GIRLS

IT is a very troublesome thing to build a real town, and it costs a great sum of money. There is the land to buy, streets to make, sewers to lay, architects, builders, clerks, foremen, and workmen to pay. Then inspectors and surveyors come to see that the work is being done as they like. So that not many people have ever built a whole town alone. We will try to do so.

We shall be architects and builders as well. The ordinary builder does not make his plans. He may take the plans of the architect, and make his walls the sizes given him by the plans. But we must take the drawings given us and make new drawings for ourselves, the proper size of the houses we want to make.

We shall learn here how to build a town—let us name it Modeltown. We shall not start as grown-up builders do, and our town will not cost very much either. A very few cents, if carefully spent, will give us the materials for houses, churches, shops, railway-stations, fire-stations, bridges, a grand hall, and all the belongings of a go-ahead town. It may be possible to find in your home most of the things needed—some cardboard boxes, a penknife with a nice sharp point, which is better than scissors, a gluepot, a pencil, a ruler marked in inches, and a pair of compasses or dividers.



Brush. Compasses. Spill.

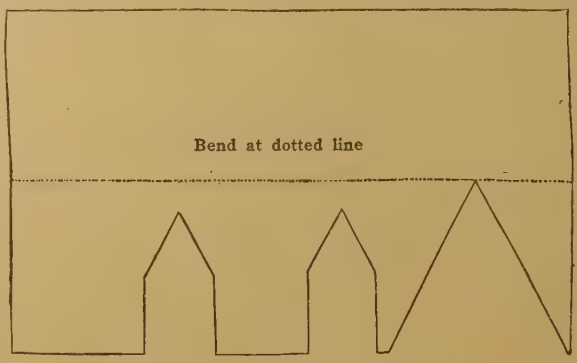
But if you want to build the town very well indeed I will tell you what to get. For a foundation nothing is better than sheets of strawboard—the brown or yellow board which perhaps you would call cardboard. Our town can be made to stand upon a few imperial sheets of this costing from a nickel upwards. If you cut one of these in half you will have a very nice plot on which to erect buildings. Some white cardboard, such as is used for mounts for pictures, will be the best material for the houses. Large sheets, enough to build a church or a museum and a few houses with, can be got for five cents, or it will cost more if a thick quality is used. You will want a rule marked in inches, with each inch divided into eight parts. You will have given you with Vol. I. of this book a set of *scale* rules which you will find very helpful. You will also be told the meaning of *scale* rules and how to use them.

You must have a pair of dividers, or compasses, to measure up the lengths of your walls. A cheap pair was bought for ten cents—here it is in the picture.

Two set-squares, which can be bought for a nickel each, will save you a great deal of time and setting out by compasses. If we do not buy these, we can learn how to make a simple instrument of the same kind in that part of our book beginning on page 481.

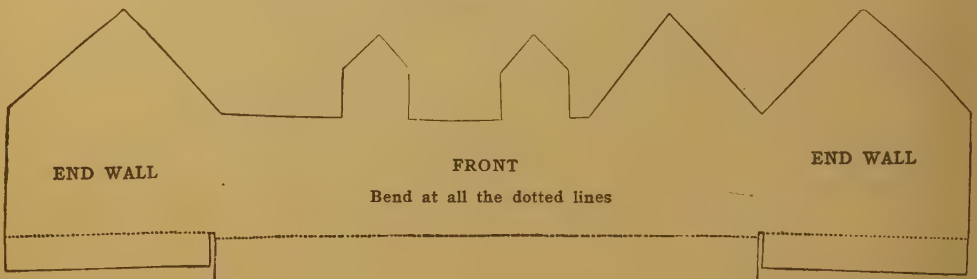
Builders use mortar and nails and difficult joints in woodwork to stick the building together, but we shall not want any such troublesome materials. Paste, mucilage, or even gum will stick our house together. But far better than any of these is glue, and it is also cheaper. A nickel will buy enough for our city. Put some pieces of glue, broken small, into a jampot with a little water. Put the jampot into an old saucepan with plenty of water in it, and let it get very hot on the side of the fire or on the stove. Or we can buy liquid glue in tubes.

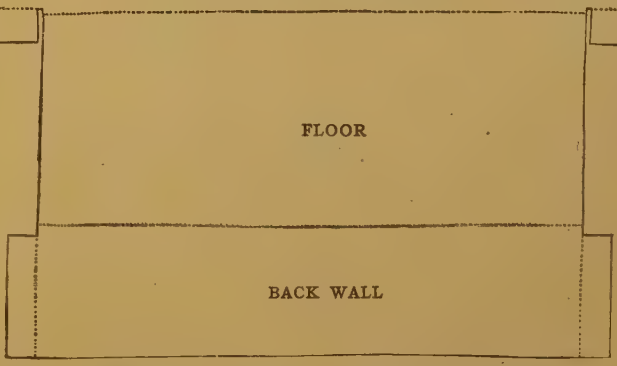
For the larger surfaces it will be necessary to have a brush. The brush shown in the picture is quite large enough, and costs a nickel. But for the smaller slips which fasten the walls together this brush is too large and messy. Make some nice long, tight spills as in the picture and use the points of these. They will do quite well. Do the work quickly, so that the glue does not set before you stick the surfaces together, and in a minute or so the wall will be fast. Other things may have to be held for some time to prevent slipping. You will want, of course, a lead pencil with a sharp point, and a knife also you must have. But what boy or girl is without a knife? Only, this knife, besides being sharp enough to point the pencil cleanly, must have a sharp point to the blade, and the keener the point is the better it will be, for not only will you have to cut out the shapes from the cardboard, but some of the lines must be cut only half through, so that the cardboard will bend at a sharp and clean angle, but not come apart. It is easier to cut the shape out completely than to cut the line only half through, but we shall have to cut half through sometimes if we are to do our work well. So be careful with the knife, and get and keep a sharp, keen point. You must have, too, a nice, steady hand, or you will let the knife slip and spoil the plan or cut the ruler.



1. Plan for making the roof

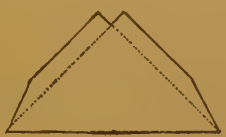
Some of the buildings will have more than one floor. To support these against the side walls, we shall use small splinters of wood, glued to floor and wall. Now, I do not know whether you can be trusted with a box of matches, even safety ones. If your mother says "Yes," then get a box, cut off the striking head, and you have got all the timber you want. If you cannot have matches yourself, ask your father to prepare these for you; or, if you prefer to supply the wood yourself, get a bundle of kindling, costing a cent or two, and you will find that most of the sticks will "splinter" into the necessary sizes. But take care not to cut yourself. If you make the pieces the size of matches, they will do very well.





2. First plan for making Shakespeare's birthplace

We shall want our buildings to look well after



3. End of roof

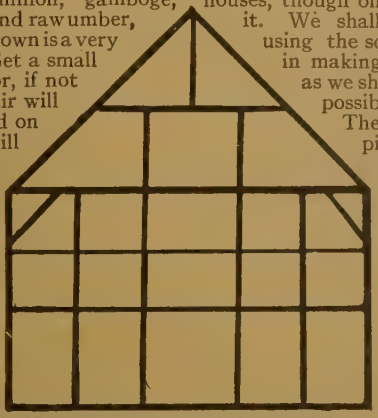
4. Top of small attic windows

5. Top of large attic windows

6. Chimney

Make all your lines double the length of the lines in these pictures

they are built. Plain white cardboard by itself will never do. And this brings us to the color-box, fitted with its little cakes of students' colors. Indigo, French blue, black, Prussian blue, lake, light red, vermilion, gamboge, chrome, ochre, burnt umber and raw umber, burnt sienna, and vandyke brown is a very good list of useful colors. Get a small brush, of sable if possible; or, if not sable, then one of camel's hair will do. The colors can be mixed on a white plate. Then you will want a sheet or two of sandpaper of two different roughnesses, to imitate what the builders call rough-mortared surfaces. If you have to buy this, ask for one sheet number 0 and one sheet number 2. Another way, perhaps a better way, of making the walls look like rough stone is to paint them with thin hot glue, and to put dry sand on it at once. The sand will remain on the glue and look like stone.



7. Marks for end walls of Shakespeare's house

That for the present closes the list of things we need, and we may proceed to build. We shall finish each part of our town by itself. A house, a villa, a church, a shop, will each be separately built. It will never do to let these buildings stand anywhere to be knocked down or crushed, or to get dirty. A storage place must be found. A big box on the upper shelf of a cupboard would be capital.

Now, before we begin to make the first building in our town, we must have all our tools and materials in order, and ready at hand. Let us understand what they are:

A sharp penknife, with a well-pointed blade.
A pair of compasses.
The scale rules given with Vol. I.
A lead pencil.
Some paints and brushes and crayons.
A gluepot and glue, or a tube of paste.
Two sheets of strawboard, to begin with.
Two sheets of white cardboard, to begin with.
Some wooden matches without heads.

Shakespeare's Birthplace

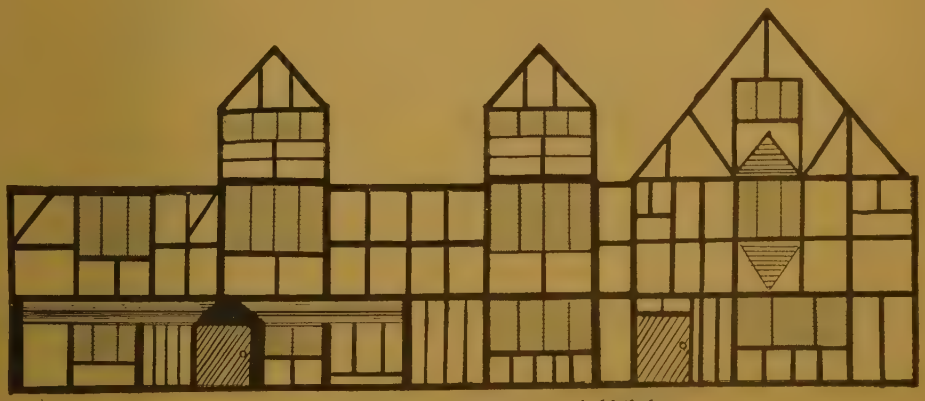
We shall begin Modeltown with an easy house—a model of Shakespeare's birthplace at Stratford-on-Avon, one of the simplest houses, though one of the wisest men lived in it. We shall make this house without using the scale rules which we shall use in making most of the other buildings, as we shall begin in the simplest way possible.

The first thing we shall want is a piece of white cardboard, which must not be too thick, or it will be difficult to work with. We can make the four walls and the floor out of one piece. All that is necessary is to cut out the cardboard to the shape of the drawing I have made, shown in the picture [2], but you should make your drawing twice as large as mine. The best way would be for you to make a drawing of your own, taking care that *each line in it is exactly twice as long as mine.* You can do this with a rule and your compasses.

You will notice that one part of the drawing is marked "floor," two other parts are marked "end walls," and another is marked "back wall." By bending the cardboard you get the floor and all the four walls to fit together, so that they make the house without the roof.

To bend the cardboard you must cut it *halfway through* with the penknife, and the cut must not be on the side towards which you are going to bend it, but on the other side, so that you will bend the cardboard with the cut outside. In this way it will bend easily, whereas if you tried to bend it with the cut inside you would probably break it.

What you make is really a little box, with peaks on the top of the end walls, and more peaks where the three attic windows are. You will find it better to mark the black lines shown in pictures 7 and 8 before the cardboard has been folded up to make the walls, and while it is still flat.



8. Markings for the front of Shakespeare's birthplace

The dotted lines show where you must bend the card (after cutting it *half through*). Do not bend the card too far or you will run the risk of breaking the card. Then you will find that the small pieces bent over from the end walls will touch the ends of the floor, and the pieces bent over from the sides of the back wall will fit into the end walls. Now, using glue, or gum, or paste, fix these pieces to the places they touch, and you will have a strong little box. This is the house without the roof. Paint the windows with light blue paint. You will easily know which are windows. They are shaded with tiny dots in picture 8.

Now we begin the more difficult task of making the roof. The attic windows make it more difficult, but it is not too difficult. First cut out a piece of cardboard the same shape as picture 1, but of course twice the size if you are making the house double the size of the picture.

9. Shakespeare's birthplace made in cardboard

Having cut the cardboard the shape of the roof, now cut out two pieces of cardboard the shape of the drawing in picture 3, bend both the roof and the roof end pieces at the dotted lines, and glue or cement the end pieces underneath the roof; stick them near to, but not quite at, the ends of the roof. They must be put on so that the tops of the two end walls will come on the outside of the roof ends when the roof is placed on the top of the walls.

Now cut a piece of cardboard the shape of the large attic window. This shape is shown in picture 5. Don't forget to make it twice the size of the picture. It has three dotted lines. The line in the middle is where you bend the pieces down to form the ridge, and the other two lines must be bent in the *opposite* direction, which means that you must make the half-through cut on the under side of the cardboard. Now glue these pieces to the roof, the two bent-up pieces going under the large roof. Having made and put on the part of the roof over the large window, it will be easy to make and put on two pieces for the two smaller attic windows, the shape of which you will take from picture 4. Both are the same size, and the shape is given. When the roof is made so far, paint it red. Get the tint like red tiles. Red ink will do very well. Put it on with a small brush, or with a feather.

Now, we come to the last thing—the chimney. Cut out two chimneys the shape shown in picture 6, but twice the size, and fix them so as to make two square tubes. Now double the two tails over towards the inside of the tubes. You will probably have to tie the chimneys with thread while the glue is setting hard, and you will do it better if you put a pencil or something else about the same size into the chimneys while they are setting. Then glue the chimneys on to the roof, one in front close to the ridge on the right-hand side and the other about the middle, a little way down the back slope of the roof. The last picture [9] will show you where the chimneys should be placed. Paint the tops of the chimneys black, or make them black with ink.

We have now completed a little model of one of the most famous houses in the world, and by looking at picture 9 you will see what it ought to be like when you have finished it. You will notice, however, that we have not attempted to make the windows and the porch over the door, but have merely drawn these on the front. These things are very difficult to do until we have become very clever at this work, but you may be able to add these exactly as they are with a little practice.

The next building lesson, describing how to make more difficult houses and buildings, is in that part of our book beginning on page 481.

HOW TO BE YOUR OWN MAGICIAN

THE INEXHAUSTIBLE MATCHBOX TRICK

I FANCY every boy has a yearning to be a conjurer, and, within certain limits, there is no reason why he should not. There are plenty of capital tricks that can be done by an intelligent boy, if he will take pains, and the first we will take is the trick of the inexhaustible matchbox, an excellent piece of mystery making.

The effect of this trick is as follows. An ordinary "safety" matchbox, of small size—the kind you can buy for a cent at any store—after being shown full, is completely emptied, the matches being turned out upon the table-cloth. The box is closed. When again opened, it is found to be full of matches, as at first. These also are turned out. Once more the box is closed, and once more, when opened, it is found to be full. The third batch of matches is shaken out, after which the operator endeavors to put them all back again, but without success, for, even when packed as closely as possible, the box cannot be made to accommodate more than half those upon the table.

The secret lies mainly in the fact that the matchbox used, though ordinary in kind, has undergone a special preparation, as follows:

With a sharp penknife, split six or seven of the matches right down the middle. Take out the "drawer" portion of the box, turn it over, and smear the underside with glue or paste; then lay the half-matches, all pointing the same way, side by side upon it. If this is neatly done, the inverted drawer thus

treated will have all the appearance of a full one right side up. When the glue is dry, reverse the drawer again, replacing the matches that it contained. Push it halfway only into the outer case; and, into the opposite end of the same case, push the drawer portion, also full, of another box. You will thus have two drawers in one case, the appearance being as shown in the picture. The unprepared drawer is represented by *a*; the prepared one by *b*. This box, at a suitable moment, the owner brings forward as if it were one in ordinary use, taking care to keep the end *b* well covered by his right hand. Making some remark about the strange properties of matches of this brand, he offers to give an illustration of one of them. So saying, he shakes out the visible matches upon the table, and shows the box empty. Remarking "Now I will just close the box again," he brings the left hand up to it, as if merely to push in the drawer, but, as a matter of fact, presses in *b* from the opposite end, thereby pushing out the empty drawer into his left hand, where it remains concealed. He holds up the box in the right hand, showing it fairly closed.

The magic matchbox that any boy may make

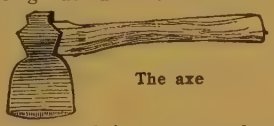
This calls all eyes to the box, and gives him an opportunity to drop the empty drawer into his lap if he is seated, or, if otherwise, behind a book or other convenient object placed beforehand on the table. Then, blowing upon the box, and pronouncing some magical formula, he pushes open the box again, showing that it is still full of matches. This is done with the one hand only, the other falling carelessly on the matches already turned out on the table, and secretly getting possession of a score or so of them, which he holds against the palm by the pressure of the thumb. The second lot of matches is now shaken out upon the first, and again the box is closed. Once more the performer blows upon it, and, under cover of so doing, turns it upside down. When he again opens it, it is once more apparently full, the matches glued to the bottom of the drawer being now brought into view. Transferring it to the opposite hand, he gives it a shake, allowing the matches concealed in that hand to fall from it as if out of the box, then again turning it, so as to bring the empty side of the drawer uppermost.

"Now," he says, "you can all testify that these matches came out of this box. To show you that there is no deception, and that they have really multiplied, we will try how many we can put back again." He fills the box, but there is still an equal number left over. These he presents to the company.

THE BOY CARPENTER'S BOX OF TOOLS
AND HOW TO MAKE THE BOX IN YOUR OWN HOME

EVERY boy should have a box of tools, and know how to use them. With practice, you may make many things useful and ornamental.

While you will not be able to have as many tools as a proper carpenter, you may, with careful saving and wise spending, have enough to do many useful things which would otherwise have to be sent out to be done.


The axe

There are, of course, different qualities of tools, and you should purchase the best you can afford. You could get a toy saw for a quarter, or even for less, but you would not be able to do much good with it. You should get a saw that costs not less than one dollar, and if you pay a little more for it, it will be well worth the extra cost. Carpenters usually buy saws costing very much more than this.

The tools you must have are an axe, a hammer, a saw, chisels, planes, a screw-driver, and a gimlet. Let us look at these tools, and see how they are used.

The first is the axe, or hatchet. We shall want only a small axe. You may not

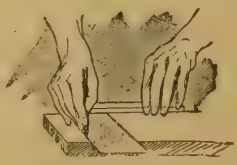
Using the axe

The saw

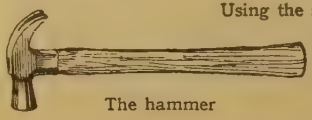
Using the saw

have to buy a special axe, as there is usually an axe for chopping wood in any house, and you may be able to borrow this when you require it. The axe is used for splitting wood, as you see. Wood has what is called a *grain*, which is always up the way the tree has grown, and it can be split up the way of the grain, but not *across* the grain. When you wish to cut wood *across* the grain you must use a saw. When the grain of the wood is very regular you can split wood evenly with the axe, but if the grain is twisted you cannot do so. Therefore, even when you want to have the plank of wood cut the way of the grain it may be necessary to use the saw instead of the axe. There are many saws. The kind you want is a handsaw, say about fourteen or sixteen inches long. You can use this both for sawing the long way of the grain and across the grain. There are many ways of sawing, but there is only one right way. You must work the saw backwards and forwards regularly, not rocking it from side to side, or you will cut unevenly; and not jerking it out and in, or you will blunt the saw, and tire yourself very soon. Before beginning to saw, make a pencil-line on the wood where you want to cut it, and make the saw follow the line very carefully. You must have in addition a foot rule, a set-square will be useful in marking wood, and the BOOK OF KNOWLEDGE scale rules, given with Vol. I., will help you.

The square



Using the square



The hammer

The chisel

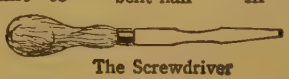
Using the hammer

Taking out nails

Using a chisel

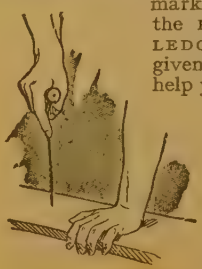
Straightening a bent nail

The gimlet



The Screwdriver

The plane



Using a gimlet

A hammer is a tool you cannot possibly do without. Its chief use is for driving in nails. Get what is called a *claw-hammer*. By using the two claws in the way shown in the picture you can draw out nails from wood so as to use them over again. When you have drawn them out you will probably find that they are bent, and that you cannot drive them in again properly. Therefore you must straighten them. Put them on a piece of iron, stone, or a block of hard wood—not upon anything that must not be damaged—and place the point downwards as in the picture. Then strike the high place with the hammer until the nail is straight. Use new nails wherever you can, but you must begin with the idea that you are going to spend as little money as possible. Chisels are used to cut the wood where an axe or a saw would not be suitable. We use a chisel, for instance, to cut away the wood to make room for a lock on a door, and sometimes before putting on hinges.

We use a gimlet to make holes chiefly when we are going to put in screws. For ordinary driving nails it is not necessary to make holes with the gimlet unless the wood is very hard and likely to split.

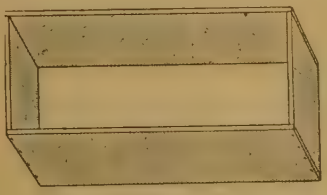
The screwdriver is for putting in screw-nails. It is pressed against the head of the screw-nail with its point in the slot of the turned head, and is turned round at the same time.

Now we come to the plane. If you look at an ordinary wooden fence and then at a door in a house you will notice a great difference in the surface of the wood. The fence will probably be rough, or almost hairy. The reason is that the door has been planed and the fence has not.

Using a screwdriver

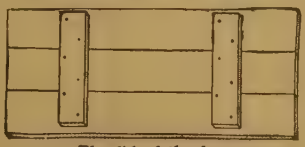
Using the plane

All wood to which we want to give a smooth surface must be planed. Another reason for planing is that if we paint wood that has not been planed we use much more paint than we should use if the wood had been planed. Wood not planed uses up paint as blotting-paper uses up ink. In using the plane, push it forward on the wood steadily, and press upon it evenly all the time. The edge of the plane-iron, which does the work, must stick out below the bottom of the plane, but not too far. The plane-iron and the chisels must be kept sharp; and you should also have an oilstone by all means. The stone is called an oilstone because it is used with a little oil in rubbing the edge of a tool upon it.



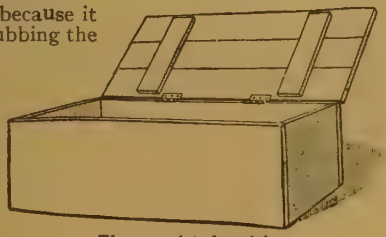
The ends and sides of the box

Box end and position of bottom



The lid of the box

The position of a hinge



The completed tool-box

The first thing you might make with your tools is a box in which to keep them. You can no doubt find somewhere an empty soap or sugar box, or you may probably buy one from the grocer for a few cents.

Having got the box, take the sides apart by pulling out the nails. Now measure off two pieces eighteen inches long and six inches wide. These are for the two sides of our tool-box. Then measure off two other pieces six inches by seven inches to make the ends. Cut out these pieces, plane them until they are good enough, and nail them together so that they look like the top picture, with the end pieces fitted inside the sides.

The total length when nailed up is eighteen inches, and the width will now be more than seven inches—it will be eight inches if the wood of the sides is half an inch thick. Now nail on pieces of wood to make the bottom, having cut them out as you did the sides. You may get the bottom in one piece, but if the wood is not wide enough you must nail pieces together.

Now you must make the lid. Take one or more pieces of wood making the same width altogether as the bottom. Nail across them as in the drawing, two pieces that do not go quite to the edge. The lid is now made. You can use it as a lift-off lid or you can put it on with hinges, which you can buy. Fix these on with screw-nails, screwing them to the edge of the lid first. Then chisel away a little of the wood from the back of the box so as to make room for the hinges. You can put a lock on it if you like, and fit inside a tray to hold nails and other small things.

HOW TO MAKE A KALEIDOSCOPE

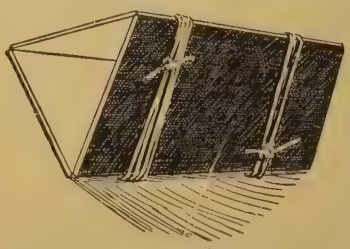
THE little toy which is called a kaleidoscope will give you great enjoyment. It is one of the most famous toys in the world. There is a good deal of mystery about it, and many grown-up people will be quite puzzled to know how all the beautiful things that can be seen in a kaleidoscope are made to appear.

Kaleidoscope is a long word, and we should understand what it means before we begin to make one. It is a word made from three Greek words, and means *an instrument with which we can see things of beautiful form.* It will be good for you to know what the three Greek words are. They are KALOS, *beautiful*, EIDOS, *form*, and SKOPEO, *I see.* Sometimes people make large kaleidoscopes, and if there are in your house three large mirrors you can make such a kaleidoscope also. If you put the three mirrors together so as to form a triangle, and stand in the middle of the triangle, you will see how one boy or girl can become a large crowd. You will see not only your reflection in the mirror, but also *the reflection of your reflections* repeated many times. Wave your handkerchief, and you will seem to see dozens and hundreds of boys or girls waving handkerchiefs. If you have a light above your head, and if the mirrors incline a little towards each other at the top, the effect will be more remarkable still.

In making the kaleidoscope, pierce the bottom of the tin neatly with a nail to make the eyehole.

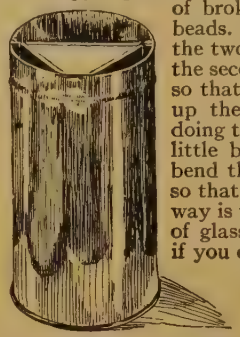
But not many people have these large mirrors, and even if they have they may not be able to bring them together into the form of a triangle. So we shall make a small kaleidoscope, one that we can hold in our hands, and may even be able to put into our pocket. It will not cost much either.

First we must get a small round tin box; an empty cocoa or mustard tin will do if it is round. Now take a nail with a sharp point and make a hole in the middle of the bottom of the tin. The hole will not be quite large enough. Get some other thing with a sharp point to make it larger; a small iron poker or a coal-hammer, perhaps. The best tool to use would be what blacksmiths call a *punch*, but you are not likely to have one of these. But you can easily make the hole about as large as a ten-cent piece. Now you will need three pieces of glass half an inch shorter than the tin is deep, and just so wide that when you place the three in the box, in the form of a triangle, their corners will touch the sides of the tin, with very little room to spare. If you can get three pieces of looking-glass, so much the better. If you use common glass, paste black paper on the back of each piece. If you cannot get glass at all, three pieces of tin will do, or one piece of tin bent over in two places so as to make a triangle. But let us suppose that you are using glass with black paper on the back.



Tie the three pieces of glass together before putting them inside the tin.

The best way to find the proper size of the three pieces of glass is to cut out pieces of cardboard, all exactly alike, until you find the right size to go into the tin to make the proper triangle, and then you have only to buy three pieces of glass the same size as the card. Any glazier or picture-frame maker will sell you the three pieces for not more than a few cents.

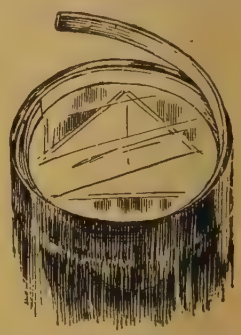


The position of the three pieces of glass in the tin.

Before you put the glasses into the box, tie them together in the form of a triangle with a piece of string, or paste a band of paper round them so that they will remain in the right position. Then put them into the box. If you have made the glasses the right size, they will come to within half an inch of the top of the rim of the tin. Now you must get a round piece of glass that will go into the tin easily and fit it right on the top of the ends of the three pieces of glass.

The inside of the Kaleidoscope as it would look if a piece were cut away.

This piece of glass must be quite clear without any black paper on it. Now make a narrow cardboard ring and fix it inside the tin around the side, so that it will keep the piece of round glass from falling out. The cardboard ring must be so thick that the round piece of glass will not fall through it, and must be narrow, so that yet another round piece of glass may go on the top of it and still be just under the edge of the tin. This second round piece of glass must be *obscured* glass — the white-looking glass that you cannot see through. You can get this from a glazier.

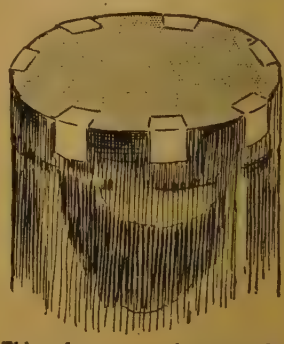


Put the cardboard ring between the glass discs.

Before you put on this second piece of glass, however, you must find some small pieces of broken colored glass, or colored glass beads. These will lie in the space between the two round pieces of glass. Now make the second piece of glass fast in some way, so that it will not fall out when you turn up the tin. There are several ways of doing this. If the top piece of glass is very little below the top of the tin, you can bend the edge of the tin inwards a little, so that the glass cannot fall out. Another way is to gum some paper to the top piece of glass, and gum it also to the tin; but if you do this you must not put the paper far enough over the glass to come into the inside of the triangle.

It is desirable to cover the tin with colored paper, and the kaleidoscope is then complete. Look through the hole in the bottom, holding the other up to the light, turn it round and round, and thousands of pictures will come.

You could never count the number of new pictures you can make with a kaleidoscope. No two are ever quite the same, and you can go on making fresh ones for ever. The pieces of glass are *reflected* in the three mirrors many times, and all the reflections make what is called a *pattern*. Designers of carpets and other things often use a kaleidoscope to give them patterns, but no man could draw so many beautiful designs as we can get in this way.



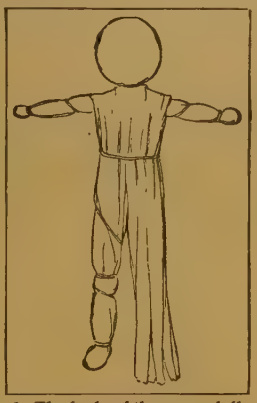
This shows you how to fix the last glass disc at the end of the tin with gummed paper.

HOW TO MAKE LITTLE RED RIDING HOOD DOLLS

WOULD you like to make your own dolls? I know how very much nicer and dearer to us are the toys which we have made ourselves out of scraps, and so I am going to tell you how to make a lot of lovely things which your friends will never believe were made by little nursery folks. We will make a whole family of dolls, and we will name them after our friend Little Red Riding Hood.

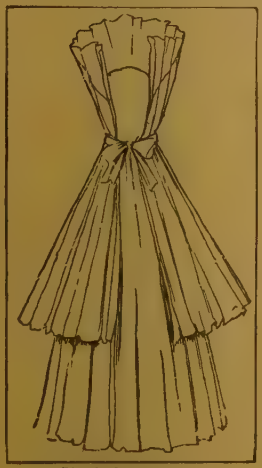
We will start with a doll like the one in the picture at the bottom of this page [3]. Doesn't she look quaint and pretty in her little cloak and hood? Well, you can make a whole family of these, with nothing but paper, for a few cents!

First buy a roll of assorted crepe paper, such as is used for making lampshades and flowers. By asking for the assorted kind you will have in one roll several sheets of paper of different colors, a most important point to remember if we are to dress our dolls. To make the body, take a piece of pink paper and roll it to form a ball about the size of a big marble. This will make the head. Now have a large sheet of the same crepe paper about 14 or 15 inches long, and draw it several times through your hands until it is as narrow as the round piece which forms the head. Place this ball in the centre of the paper, and then fold it over and tie a piece of cotton quite tight under the ball. Now we have made the head.



1. The body of the paper doll

The next thing is to make the arms. These are made together by creasing a piece of the paper about 18 inches long very tightly, and folding the ends over until they almost touch each other. Tie them firmly at each end to form the wrists, and again near the centre. This will look like a long roll, which you will slip just under the head between the folds of the pink crinkled paper. Another piece of cotton must now be wound tightly round under the arms to make the shape of the upper part of the body.



2. Cloak for paper doll

Our doll begins to look hopeful, and we can see already a little of her shape. But the most important part remains to be done, so we will begin to make the legs. For these we must slit the part of the paper which remains from the body, and wind a piece of cotton round each side to form the thighs, knees, and legs, folding the ends of the paper under to shape the feet, as our first picture shows. These will be covered with black tissue-paper to represent the little shoes.

For the face you can cut out a picture-head of a child which you will find in any paper or magazine, and gum it on to the head-part of the doll, coloring the face pink for the cheeks, blue for the eyes, red for the lips, and brown for the hair and eyelashes.

The doll now needs only to be dressed. A short piece of any colored paper you like will do for the dress, but it must be wide enough to go right round the little lady. Cut the paper exactly the length of the doll from neck to half-way between the knees and the feet. Then stick the edges of the paper together at the back; pass it over the head, and tie round the neck after making two holes for the arms to go through.

For the cloak, take a piece of red paper longer than the one used for the dress, but this time it must meet in front without being joined. Leave a long piece above the head, and tie it with cotton round the neck as shown in picture 2. The piece left above the head is for the hood of Little Red Riding Hood. Round off the corners with a pair of scissors, and gather the fulness by carefully running a thread all round the hood. This must be done very carefully to avoid tearing the paper. If you prefer it, a piece of very narrow baby-ribbon can be threaded through from each side, and tied on the top in a neat little bow. A piece of the same ribbon should be tied round the neck and finished in a bow to hide the cotton which keeps the paper in place.

Our first paper doll is now complete, and in the picture [3] she certainly looks charming.

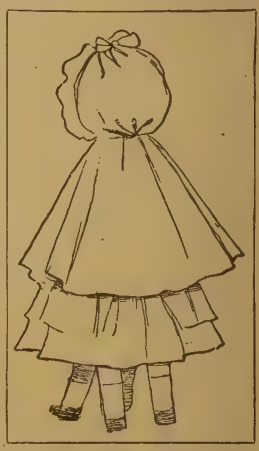
Now let us give Red Riding Hood a sister in cardboard. This can be made quite easily. Place a piece of thin paper over picture 4, and trace the outline. Then lay the

3. The finished paper doll

4. Pattern of cardboard doll

paper over a piece of cardboard, and by going over the drawing with a sharp pencil you will make a mark on the cardboard by which you can cut the doll out.

When you have traced and cut *two* pieces exactly alike, stick the two heads and bodies together, leaving the legs loose, so that they may be bent apart to form a support. You will find that the doll then stands all by itself. The next picture [5] shows this. If you have a box of paints now is the time for you to use them. Paint the face in a pretty pink shade, and try to shade it so as to give the doll nice rosy cheeks, blue eyes, red lips, and dark hair. The dress should be a very pretty green color, and the cloak, of course, must be of bright red. Paint the stockings red and the shoes black. When finished she should look like Red Riding Hood in picture 7.

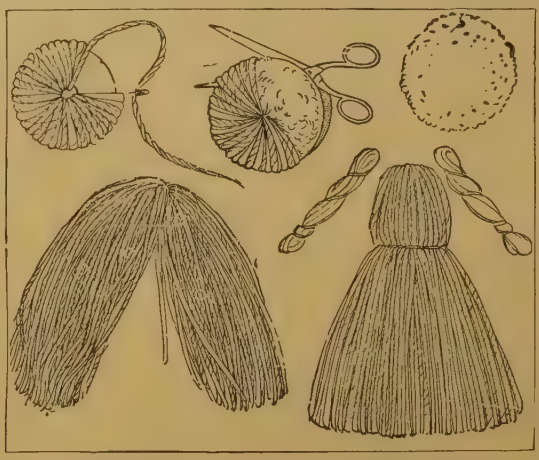


5. How the doll stands upright

first part of our wool doll.

The arms are made by twisting a long piece of wool round and round until it forms a cord. When two of these are done, cut one end of each into a tassel for the hands, sewing the other end on to the top part of the body.

The head is the most interesting part to make. The picture [6] shows you the best way to do it—in the shape of a ball. For this you must take two round pieces of cardboard as big as a silver dollar, put them quite close together, and make a round hole as big as a quarter, through the centre. Through this you must wind round and round as much wool as you can get on the cardboard. Put the point of the scissors between the two cardboards, and cut the wool evenly all round. The picture shows exactly how this should be done. Then wind a piece of thread round the wool *between* the pieces of cardboard, and tie it firmly in the middle. Take away the cardboards and shape the wool, and you will have a round, tight ball.



6. Making the head, arms, and body of the wool doll

7. The finished cardboard doll

She has a little woolen sister, who is a dainty little person. To make the body, take half an ordinary skein of white Berlin wool, cut in a bunch of about 18 inches long. Then tie it tightly in the middle — the picture [6] shows you how. Fold the wool over and tie again just under the first knot to form the waist line, as in the picture. This is the

Mark the eyelashes on the ball with black silk, the nose and mouth with red silk, and the eyes with blue silk. For the eyes blue beads are a great success.

To complete the doll, tie round the waist a sash of satin ribbon, and make a red cloak and hood.

8. Red Riding Hood wool doll

THE NEXT THINGS TO MAKE AND TO DO BEGIN ON PAGE 481.

WHAT THE WISE MAN TELLS US

THE questions grow more puzzling than ever as the children find the Wise Man able to answer them, and the questions that come into these pages are just those questions that boys and girls have asked since time began. All of us have wondered why we go to sleep and where we go in our sleep; what dreams are and why they come; why we laugh when we are pleased and cry when we are hurt; and where the tears come from. Here the Wise Man tells us of all these things; and he tells us, too, of the falling leaves and the dying flowers; of the wonderful heat of the sun and how it keeps alight; and of the beauty of the sky. The pictures show us the wonder of a buried city dug out of the earth.

WHY DO WE GO TO SLEEP?

CONTINUED FROM P. 320

NO one is quite sure why we go to sleep, said the Wise Man, when the children asked this question, but I think the real reason is that, while we are awake, we make something in our bodies which the blood carries to the brain, so as to put it to sleep, just as medicine will put you to sleep; and the best kind of medicine is the kind that is most like the stuff that we make in our own bodies for this purpose. This is not the whole of the answer to your question, but I think it is most of it.

WHAT GOOD DO WE GET BY SLEEP?

If you put the question in that way, said the Wise Man, the answer is that we go to sleep so as to rest. The whole body rests when asleep, more or less—the brain, the heart, the lungs, the muscles, stomach and all. Children want a lot of sleep because children have to grow, and *they do most of their growing during sleep;* so if they will not go to bed they will not grow properly. Sleep is more important for children than for anyone else, just for this reason, though no one can get on without it. Many of the people who grow up too small or weak, or poor in their minds, are people who did not sleep enough when they were children. Time was when older people were careless about children's sleep, but one of the happiest and best things for children nowadays is that their sleep is looked after.

WHERE DO WE GO IN OUR SLEEP?

Ah, said the Wise Man, that is a question indeed! At any rate, I am quite sure that we do not go anywhere. We are still there, only we are not awake. That means that we are not awake to what is around us; but though we take no notice of what is around us, we are still there; and even while we are fast asleep we are often doing all sorts of things, or, rather, we think we are.

This is so every time we have a dream, and we have far more dreams than we remember when we wake. Long ago savages used to think that men merely went away somewhere when they slept, and dreaming was one of the reasons that made them think so; but I am sure that that was a mistake.

Dreams do people all sorts of harm if they are not sensible about them; but we must be sensible, and then they will not hurt us or make us think that terrible things are going to happen. Dreams show that we have really not gone away, because they are almost always due to something disturbing us, and nothing could disturb us if we were not there, could it?

So slight a thing as the wind in the chimney, or a leaf tapping on the window-pane, may make us dream. But the commonest thing that disturbs us is our stomach. If we eat too much before we go to sleep, and especially if we eat things that do

not agree with us, then in the night they disturb the brain, and make part of it wake up, though not so much as to make us know where we are. So, also, noises often make us dream because they disturb the brain. But sounds could not disturb the brain if we were not still there to hear them.

WHY DO I LAUGH WHEN I AM GLAD?

What hard questions you ask, the Wise Man said. Will you be content if I answer that you laugh because you are "made that way"?

Yet, though perhaps you do not think much of it, that is the real answer. It depends upon the way in which your brain and body are built. After all, you laugh when you are tickled, even though you may not be pleased, and that is really easier to explain. If a bright light suddenly strikes your eye, you shut it because your brain is made so as to make you reply in that way.

That is a simple way of replying. And laughing when you are tickled is really the same, only that instead of doing just one thing, you do a number of things all at once. You move many muscles of your face instead of merely moving the muscles of your eyelids. You also move the muscles that you breathe with, in an unusual way, and also the muscles that you make sounds with. It is this particular movement of all these muscles together that we call laughter, and it is really a reply to the tickling, just as drawing away your foot is a reply when someone tickles the sole of it.

WHY DO I CRY WHEN I AM HURT?

The best answer I can give to this, said the Wise Man, is the answer that I gave to the last question: You cry because your brain is so made as to act that way. We do not know why your brain should be so made, for though there is much use in tears when we are not crying, as I shall tell you in a minute, yet there is no real use in crying when we are hurt.

When people grow older they find this out, and usually they do not cry when they are hurt. The highest part of the brain—where people themselves really live—is the master of the lower part of the brain, and can order it to do things, and forbid it to do things, as it likes.

Now, it is the lower part of the brain that replies by crying when we are hurt, so that even the tiniest baby can cry perfectly. But when we grow older we tell the lower part of the brain that it must not do as it feels inclined to do, and so we stop crying.

WHY DO THE TEARS COME?

There is no good reason why tears should come when you cry, but there is a very good and beautiful reason for the tears which we are really making all the time that we are awake, though we know nothing about it. You know quite well that every few seconds you wink both your eyelids at once. You do not do it on purpose, but you do it all the same. If you purposely stop doing it, as little boys and girls often do when they stare at each other, your eye becomes very uncomfortable, and if you did not wink at all your eye would soon cease to work properly.

Now I will tell you what winking does for the eye. When the eye is open, the front of it is exposed to dust and dirt, and also the front of it is apt to get dry, and if it got dry we could not see properly. Yet how is it that, though we never wash the front of our eyes, they are always clean? It is because we wash them every time we wink. Up above each eye, rather to the outer side, there is a tiny little thing called the tear-gland, and all the time we are awake this is slowly making tears. Then, when the front of the eye feels itself becoming rather too dry, and perhaps even a little dusty, it tells the brain, and down comes the eyelid for a second, with a tear inside it, and so washes clean the front of the eye. It is the most gentle and perfect washing in the world.

WHERE DO THE TEARS GO?

Well, if you look at the inner corner of your lower eyelid you will see a tiny little hole. The tear runs down this and finds itself—where do you think? Now, I will give you a hint before I tell you. When you have been crying a great deal, do you not have to blow your nose? The reason is that the tears, as many of them as can, run down into the nose. All the time we are awake and not crying, this goes on, keeping our eyes moist and perfectly clean, and costing us no trouble. But when we cry we make far more tears than we need. Indeed, we make

so many that they cannot even all run down into the nose, though many of them do. So, as there is nowhere else for them to go, and the eye itself cannot hold them all as they come pouring into it, they get spilt over the edge of the lower eyelid, and run down our cheeks.

But, as I have said, though the tears, when we are not crying, are so useful that we could not do without them, and though the way they are made and used by the upper eyelid when we wink is one of the most beautiful things in the body, yet it is no use to make too many of them. Indeed, though the real use of tears is to make us see properly, you know very well that when you cry you make so many tears that you cannot see clearly at all.

WHAT WAKES ME UP IN THE MORNING?

In order to answer this, said the Wise Man, I must tell you that we do not sleep in just the same way all through the night. To begin with, we sleep deeply. Now, it is good to sleep deeply. It makes us look well and beautiful, and people seem to have noticed this, since they call the first hours of sleep "the beauty sleep." But for some hours after this we sleep less and less deeply. We can easily find this out by noticing exactly how loud a noise is required to wake anybody up at various times in his sleep. And we find that when he has had nearly enough sleep he will be awakened by a little noise which, a few hours before, he would not have noticed at all.

Now, that is the sort of thing that happens when we wake. We have been sleeping less and less deeply for some time, and our brain has almost awakened of itself. Then there comes a sound or a light, or perhaps we move in bed and feel ourselves moving, and since we are already very nearly awake, the sound or the light or the feeling wakes us up. Of course, we live in a way that we have made for ourselves: but if we lived out of doors, as men did long ago, and as birds do now, it would naturally be light that woke us up at last. That is what wakes the birds up now. When the sun rises, and the light gets stronger, it wakes them up, though we are awakened by a noise.

WHERE DO THE FLOWERS GO IN WINTER?

The flowers of most plants, said the Wise Man, can only live and be useful for part of one year, when there is plenty of light and warmth. When the summer goes they die. You know how the roses on a rose-bush die, but you know also that the rose-bush itself does not die.

In just the same way the leaves of most trees die at the end of the summer, but the trees go on living. Now, I want you to understand, what very few grown-up people understand, that when the flowers and the leaves die and fall, their death and fall is really a sign of life in the plant, or bush, or tree that bears them. If the whole bough of a tree is killed by something in the summer, the leaves will remain on it when the leaves of all the living boughs have fallen. There is really no waste or loss to a plant or a tree when its leaves and flowers die.

Before a leaf falls it changes its color, as we know, because the plant or tree is taking out of the leaf all the useful things that it needs for its own life. Then, at the base of the leaf, it forms a thin layer of something rather like cork, so that, after some of the useful things have been taken out of it, the leaf is left to die. There are still some useful things in the leaf, however, only they need something to be done to them before the plant can use them.

WHAT HAPPENS WHEN A LEAF FALLS?

We have seen the changes that take place in the leaf as the summer goes away, said the Wise Man. When the leaf falls to the ground, there are waiting for it many tiny living creatures called microbes, which as we say, make it decay. But this really means that the stuff of the leaf is changed in such a way that it can be taken up by the plant from the soil and built up again into the plant when the spring comes. This is one of the most beautiful and wonderful things in Nature, and there is no greater lesson we can learn than that what looks like useless death and decay and waste is really nothing of the sort, but a living process that makes for more life.

You will say, Why should not the leaves and flowers live on all the year round, as they do in some plants for special reasons? But the leaf is made in order to use the sunlight, and in the winter there is not enough sunlight, and so the leaf would be wasting its time.

So the plant takes what it can use

from the leaf and the rest of the leaf is changed, so that the plant can use that, too, when the summer is coming, and there is a use for new leaves.

WHAT KEEPS THE SUN ALIGHT?

You would think that the sun is alight because it is burning—that it is an enormous fire, said the Wise Man, in answering this question. But when a thing burns, the stuff of which it is made joins with the oxygen of the air in which it burns. The sun, however, is actually so hot that nothing can join with anything else in it; nothing could burn in the sun. There are plenty of burnable things there, and plenty of oxygen to burn them with, but they are kept apart by the heat. Also, even if things could burn in the sun, that would not keep it alight, but it would have burnt out ages ago, and we should not be here.

Last century we found out what the sun owes its heat and light to. They come mainly because the sun is shrinking. It shrinks, or contracts, by gravitation—the power which makes every piece of stuff in the world attract all other stuff to itself. The sun has been shrinking for many ages, just as the earth has been shrinking. Indeed, long before the earth was formed, the sun was stretched out as far as the earth's present distance, and even as far as the earth's furthest brother, the planet Neptune. As the sun shrinks its parts strike each other, and their motion is stopped, and heat and light are produced, just as when one piece of flint is struck by another.

So it is gravitation that really gives us the heat and light which keep us alive. Probably the sun is also kept warm, as the earth, we know, is kept warm, by having in it some of the wonderful element radium, which produces heat from within itself.

WHY IS THE SKY BLUE?

This was found out last century, the Wise Man told the children, by John Tyndall. You would never guess the reason. The sky gets its light from the sun. When the sun is away, the sky is dark. Therefore, the blue of the sky must be somehow thrown to our eyes from something in the sky which keeps all the other colors in the white light of the sun, and throws back the blue, and that is what happens.

The sky is filled with countless tiny specks of what we may call dust—specks of solid stuff hanging in the air. These are of just such a size that they catch the bigger waves of light, which make the other colors, but throw to our eyes the shorter waves of light, which make blue. If you could do away with all the solid stuff in the air, the sky would be dark, and all the light of the daytime would come directly from the sun. Skylight is reflected sunlight, but only the blue part of it.

WHAT MAKES THE COLORS OF THE SUNSET?

Now, when the sun is setting, its light does not come so straight down upon us as it does when the sun is high in the sky, but, in order to reach our eyes, it has to pass through a long layer of air, just as if you stick a needle straight into an orange it does not have to go far through the peel before it gets inside, but if you stick it sideways in the orange it has a long journey through the peel before it gets inside. So the light from the setting sun passes through so much air, and all the dust and smoke, and so on, that is in the air; and all these take something out of the white light, and throw out what they do not take. The things floating in the air are of all sizes, and so we get many different colors in sunset. So it comes about that sunsets are often finer and more rich when the are is not pure, but has much dust in it.

WHY DOES LIGHT SEEM RED WHEN WE SHUT OUR EYES?

That, said the Wise Man, is a curious question. Eyelids cannot stop all light from coming through to the eyes—that is to say, they are, in a small degree, translucent, and enough so for the sunrise to wake the birds, even though their eyes are shut. Yet, when you look at the window with your eyes shut, what you see—very faintly, but still you see it—is a red color. I wonder if you can guess why this is? It is because the light that is able to pass through your eyelids has to pass through the red blood which, of course, is always in your eyelid. Now, this red blood keeps all the other colors that go to make up the white light, but lets the red color come through it, and that is why we see red with our eyes shut in the light. If our blood were green, we should see green.

CONTINUED ON PAGE 517.

THE STORIES WE READ

THERE are many kinds of stories in the world. So far we have been reading the old, old stories that children have read for hundreds of years. We shall go on reading these, because they are the finest stories in the world. But we shall read other kinds of stories too—stories that are true, as well as stories that are imagined. Many things have happened in the real history of the world as wonderful as the happenings in fairyland or in giants' castles, and we shall read of these. We shall read, too, tales of castles and churches, towns and villages up and down the world, and many stories so strange and so old that nobody can tell whether they are true or not.

LITTLE CLAUS AND BIG CLAUS

CONTINUED FROM P. 361

LITTLE CLAUS was a poor little man with only one horse, and Big Claus was a rich big man with four horses. They lived in the same village, and every week Little Claus lent Big Claus his one horse for five days, and Big Claus lent Little Claus his four horses for one day.

"Gee-up, my five horses!" Little Claus used then to say as he went ploughing.

"Don't say that," said Big Claus. "Only one horse belongs to you."

But Little Claus could not help saying it again, and this made Big Claus angry, and he got a great hammer and killed the one horse belonging to Little Claus.

Little Claus wept over the loss of his horse, and then he skinned it and put the skin in a sack, and went to town to sell it. But at night he lost his way, and settled down to sleep on a haystack. From the haystack he looked into a farm-house, where a woman and a sexton sat drinking wine and eating roast meat, fish, and pie, with great enjoyment.

Suddenly the farmer returned. Now, the woman knew that the farmer hated the sight of a sexton, so, before opening the door, she put the wine away in the larder, and the meat and fish and pie away in the oven, and got the sexton to hide himself in a great box.

Little Claus saw all this and laughed, and the farmer heard him and invited him to come and sup with him. Little Claus and the farmer sat down to supper, and the woman brought them a dish of porridge. Little Claus did not like porridge, so he trod on his sack which he had put under the table and made the horse's skin squeak.

"What's that?" cried the farmer.

"I have a conjurer in this sack," said Little Claus, "and he says he has conjured a good dinner for us into the oven."

"Wonderful!" cried the farmer, when he opened the oven and found all the nice things that the woman had hidden there.

Little Claus then trod again on his sack and made the horse's skin squeak.

"What does the conjurer say now?" asked the farmer.

"He says he has conjured some wine for us into the pantry," said Little Claus.

"Wonderful!" cried the farmer, when he went to the pantry and found the wine that the woman had hidden there.

"Now, could the conjurer conjure up an evil spirit?" said the farmer, when he had drunk the wine and become very merry.

"Certainly," said Little Claus, treading again on the sack and making the horse's skin squeak. "He says that if you will look in the great box you will see an evil spirit there in the shape of a sexton."

The farmer just peeped in the great box, and saw the sexton, and closed the lid in a fright.

"What a wonder-worker your conjurer is!" he said to Little Claus. "If I had him, I should work no more."

"Will you sell him to me for a bushel of gold, and take away the evil spirit in the great box and throw it into the river?"

Little Claus agreed to this; and the farmer brought a barrow and placed on it the great box and a bushel of gold, and Little Claus wheeled the barrow along until he came to the river.

"Now," he said, in a loud voice, "I must throw this box into the water."

"No, no!" cried the sexton. "Let me out, and I will also give you a bushel of gold."

Little Claus did so, and on returning home with the two bushels of gold he met Big Claus.

"However did you get all that money?" said Big Claus.

"By selling my horse's skin," said Little Claus.

Big Claus at once killed his four horses, and took the skins to the tanners, and when they asked him the price, he said:

"Two bushels of gold each."

"You can't make fools of us!" said the tanners; and, getting angry, they beat Big Claus black and blue.

On returning home Big Claus seized Little Claus and tied him up in a sack, saying:

"You shall play no more tricks on me. I am going to drown you."

But the river was a long way off, and Big Claus got tired of carrying the sack. So he left it outside a tavern, and went in to refresh himself. An aged drover came by with a great herd of cattle, and heard Little Claus saying:

"At last I am going to heaven."

"I wish I were," said the aged drover; "for I am old and weary of life."

"Well, untie this sack and get in it instead of me," said Little Claus, "and you can go to heaven."

The aged drover set Little Claus free, and got into the sack, saying:

"Tie me up, and you can have my cattle."

Little Claus tied the aged drover up in the sack, and set off home with the great herd of cattle.

Soon afterwards Big Claus came out of the tavern, and carried the sack to the river and threw it in. Coming back, he met Little Claus driving home the great herd of cattle, and cried in amazement:

"Didn't I throw you into the river?"

"Yes," said Little Claus, "and I thank you for doing so. I fell on the soft grass growing in the river-bed, and a fairy opened the sack for me, and I found myself in a beautiful land crowded with sea-cattle. I got this herd together, and as soon as I have taken it home I am going back to get a larger herd."

"Do you think I could get some sea-cattle if I drowned myself?" said Big Claus.

"Of course, you can try," said Little Claus.

Big Claus resolved to try, so he went to the river and threw himself in. He was, of course, drowned, and never came out to trouble Little Claus any more.

THE SEARCH FOR THE REAL PRINCESS

THERE was once a prince, and he wanted to marry a real princess. He traveled round the world in search of one, but there was always something not quite right about all the princesses he met. So he came home unmarried.

One stormy night a beautiful maiden came to the castle, and said that she was a real princess. But she did not look like one, as she stood there with her clothes streaming with rain.

The mother of the prince, however, determined to try her. She went into a bed-room, and laid a pea on the mattress. Then she put twenty mattresses on top of the pea, and twenty feather beds on top of the twenty mattresses. She then led the princess into the bed-room, and in the morning she asked her how she had slept.

"Horribly!" said the princess. "Heaven knows what was in my bed. I scarcely closed my eyes all the night. There was something very hard in the mattress, and my whole body this morning is black and blue with bruises."

The mother of the prince saw at once that the beautiful maiden must be a real princess. She had felt a pea through twenty mattresses and twenty feather beds! Nobody but a real princess could have such a very sensitive skin. So the prince married her in great joy, and the pea was carefully placed in the royal museum, where it may still be seen if nobody has stolen it.

Little Claus had only one horse and Big Claus had four horses. Every week Little Claus gave Big Claus a loan of his one horse for five days, and Big Claus gave Little Claus a loan of his four horses for one day. "Gee-up, my five horses!" Little Claus was in the habit of saying as he went ploughing. "Don't say that," said Big Claus. "Only one of the five horses belongs to you." But Little Claus could not help saying it, and this made Big Claus angry, and he got a hammer and killed the horse belonging to Little Claus.

DICK WHITTINGTON AND HIS CAT

DICK WHITTINGTON was a poor Lancashire lad, who, having lost his father and his mother, went to London to make his fortune. His only friend in the world was a cat which he had picked up and fed when it was starving; and a very good friend it was to him, as we shall see.

Dick used to think that the streets of London were paved with gold, but he found that they were covered with hard stones, and on these stones he had to sleep with his cat for many nights. At last he got a place as a scullery-boy in the house of a rich merchant. Unhappily, the cook was a wicked woman, and she beat him every day and made him sleep in a garret overrun with rats and mice. These, however, were soon killed by Dick's cat, for the cat was an excellent mouser.

The rich merchant in whose kitchen Dick worked was a foreign trader. He used to fill his ships with all kinds of goods, and send them to far countries, where the goods could be sold at a great profit; and, being a kind man, he allowed all his servants to put in his ships anything that they wished to sell. One day, when he was about to send a ship to trade with the Blackamoors, his young and pretty daughter, Alice, came into the scullery and said to Dick:

"Now, what are you going to put in for sale this time?"

"I've only my cat," said Dick.

"Well, put in your cat," said Alice.

And to please her he parted with the only friend he had in the world.

But Dick soon began to miss his cat. The rats and the mice crept back to his garret and kept him awake at night, and the cook beat him more than she had done before. So hard did Dick's life become that one morning he tied all his things up into a bundle and set out to walk back to Lancashire.

He got as far as the village of Holloway, and sat down on a stone to rest, and Bow Bells began to chime, and the sound traveled across the fields.

"Turn a-gain, Whitt-ing-ton,
Thrice Lord Mayor of London."

That was what the ding-ding-dong of Bow Bells seemed to say to him. Poor Dick tried to laugh, and began to cry.

It seemed so impossible a thing! But he turned, and went a little way along the road to Finchley.

"Turn a-gain, Whitt-ing-ton,
Thrice Lord Mayor of London,"

said Bow Bells, and he turned and went a little way along the road to Enfield.

"Turn a-gain, Whitt-ing-ton,
Thrice Lord Mayor of London,"

said Bow Bells.

"After all," said Dick, "it's only the cook who treats me harshly. How kindly Alice spoke to me! I will turn again, as the bells say, and see what happens."

Something happened as soon as Dick regained his master's house. The ship in which he had put his cat returned with the news that his cat had been sold at a great price.

On arriving at the land of the Blackamoors, the captain of the ship went to the King of the country, and was invited to dine at the palace. There he saw an amazing sight. As soon as the dishes were placed on the tables, a vast crowd of rats and mice rushed out and devoured all the food.

"Oh dear!" cried the King of the Blackamoors. "I shall not get anything to eat again to-day."

"Good gracious!" said the Captain. "You ought to keep a cat in your palace to kill all these rats and mice."

"A cat?" said the King. "What's that? Is it a new kind of lion? I have bought hundreds of lions and tigers of all sorts, but none of them would ever kill a mouse for me."

The captain sent a sailor to the ship to get Dick Whittington's cat. When the King of the Blackamoors saw how quickly it killed rat after rat, and mouse after mouse, he clapped his hands and shouted with joy, and said that he would buy it even if it cost him half his kingdom.

"Will you take six sacks of gold for this wonderful little animal?" he asked.

The captain agreed, and the ship went to London laden with the six sacks of gold for Dick Whittington.

The wicked cook told the merchant that Dick was only a poor scullery-boy without a friend in the world, and that there was no need to give him the gold. But the merchant was an honest man. He gave Dick all the money, and had

DICK WHITTINGTON LISTENING TO BOW BELLS. FROM THE PAINTING BY JAMES SANT, R.A.

Dick Whittington thought the streets of London were paved with gold, and went there to make his fortune. But he almost starved, and was walking home again when Bow Bells chimed, and seemed to say: "Turn again, Whittington, thrice Lord Mayor of London." He went back, made his fortune, and became Lord Mayor.

him brought up as if he were his own son, and years after Dick married Alice. He was made Lord Mayor of London, and when he died left all his money to charity. Some people have doubted the truth of this story of Whittington's early life, but it is very interesting, and one that we should like to believe.

MARTHA WASHINGTON, THE HOSTESS OF LONG AGO

During Washington's two administrations the seat of government was first in New York and then in Philadelphia. Above is a picture showing Martha Washington receiving at one of her levees. All the formality and stiffness of court manners were observed, and no one was admitted to the receptions who was not dressed according to rules of etiquette which had been established by the first lady in the land. Many of the faces in this painting are portraits. You can see Washington himself in the centre of the picture and at the extreme left are Chief Justice John Jay and Alexander Hamilton, Secretary of the Treasury.

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SOME FAMOUS LADIES OF THE WHITE HOUSE

CONTINUED FROM 282

MANY of our boys and girls have visited the city of Washington and some perhaps have passed through the large, stately rooms of the Executive Mansion. It has been said that wherever a womanly woman makes her home her influence lives after she has gone; and the White House is no exception to this rule. Every room overflows with memories of the hostesses who, as the wives of our presidents, have dispensed the hospitality of the nation. We can never speak of the White House without seeing in our minds visions of those women whose names are interwoven with its history,—Abigail Adams, her brave little face framed by its delicate cap frill of lace; Dolly Madison, fleeing before the British with the spoons of the Executive Mansion tucked safely away in her pockets; Mrs. Cleveland, the young bride of the White House, graciously receiving the representatives of the nation.

The very name, "The White House," according to some writers, owes its origin to a woman, Martha Custis Washington, the wife of our first president, although she never lived there, for the house was not finished when Washington's second term expired. When Congress considered the subject of building a place of residence for its executives, General Washington, who had much influence with the committee in charge, chose the location. Only a few days before his death he walked through the unfinished rooms. There is a story that it was called "The White House" in honor of the country seat where he had gone to claim his bride, but this is doubtful. It is more probable that it was so called because it was painted white to hide the smoke-stains on the walls after the British burned it in 1814.

MARTHA WASHINGTON, THE WIFE OF THE FIRST PRESIDENT

When Washington was inaugurated for the first time, the seat of government was in New York City, and there, in a large old-fashioned house, Mrs. Washington held her levees. With the aid of Alexander Hamilton, she established strict rules of etiquette for her drawing rooms and the picture on the opposite page represents very truthfully the formality with which they were conducted. No one was permitted to attend who was not gowned according to the rules laid down, and in fact, dignity and stateliness, not to say stiffness, reigned supreme.

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Mrs. Washington herself, while precise and dignified, was a kind-hearted little lady, with frank hazel eyes, and engaging manners that soon endeared her to all those with whom she came in contact. Simple in her dress, with great quietness of taste in the ordering of her household, she was a model housewife. Her gowns and many of the suits worn by her husband were woven in her own household. It is said that the suit in which Washington was inaugurated was thus prepared. Accustomed to the busy but peaceful life of the wife of a Southern planter, Mrs. Washington bore her change to the gay life of the metropolis very serenely. While her public receptions were very formal, she preferred, in the exercise of her private hospitality, to entertain her friends with the simple lavishness of an American hostess, rather than with the brilliancy and display of a foreign court.

Above all, Martha Washington was a true wife. Naturally gentle and loving in disposition, she subdued her personality in every way to that of her husband. He was her will, her law, her very rock of strength, even as he proved the rock on which we built the firm and sure foundations of our nation. Mrs. Washington became so filled with her husband's ideas, that she could, at times, scarcely tell them from her own. As the years went by, people began to note that her soft features took on something of the look of the President's sterner ones, until all spoke of the wonderful likeness between the two. He, on his part, returned her adoration with a courtly consideration and all the protective gentleness of a strong nature for a dearly loved weaker one.

In the second year of Washington's administration, the seat of government was removed to Philadelphia. There Mrs. Washington lived until her husband's term of service ended and then at once proceeded to remove their belongings to their home, Mount Vernon, where you may see to this day the very objects used by the household of our first president. The house and grounds have been preserved for the American people by an association of patriotic women. With a light heart and much happy anticipation for the future, Martha Washington, in 1797, returned once more to the quiet life of a Southern plantation, which she loved more than high position.

A few short years of peace and happiness were passed at Mount Vernon, when the shock and desolation of widowhood descended upon the contented wife. The nation joined her in mourning the loss of one of the strongest and truest natures it can ever know. But nothing could bring consolation to the woman who had lost her tower of strength. Her heart was broken. Her mind never quite recovered from the shock, and three years later she was laid to rest beside her noble husband.

ABIGAIL ADAMS, THE LADY OF THE LACE CAP

When Abigail Smith, the daughter of a New England clergyman of good old Puritan stock, married John Adams, a young lawyer without a practice, no one suspected that she was wedding the future president of the United States. Indeed, her father's parishioners were outspoken in their sentiments regarding what they termed "the mighty poor union" of their minister's daughter. It is said that Mr. Smith pointedly referred to their opposition in a sermon on the text, "For John came neither eating nor drinking, and ye say, he hath a devil."

In truth, her married life was one that called for the exercise of all the fortitude of her cheery young soul. The times in which she lived were rough and troubled ones for women. The Revolution, opening with the rattle of musketry at Lexington, called the best and bravest of the nation to fight its battles; and, without the quiver of an eyelash, Mrs. Adams saw her husband risk his head in opposition to the British government. With her brood of little ones, and a few faithful servants, she faced the dangers of the time. The British soldiers were not feared so much as the Tories and the Indians.

"In case of real danger, fly to the woods, with the children," her anxious husband wrote her, and bearing this counsel ever in mind, she went about her daily tasks with an undismayed heart and a cool head, determined to lay down her life for her little ones, if it should be necessary. To add to her cares, pestilence broke out in the neighborhood and entered her home. Although weak herself from a recent

illness, the plucky woman turned her home into a hospital and gave all her energy to the nursing of the stricken ones. But, through it all, she found time to send messages of cheer and courage to the husband who was working for his home and land. "I am distressed, but not dismayed," she wrote cheerily to the absent head of the household; and he rested secure in the strength and cool judgment of the little woman who stood guard over all he loved and cherished.

Before the war was over and peace had settled once more upon the country, Mr. Adams returned to his family for a time; but he was obliged to leave them again to go to France as commissioner for the United States, and later to England as minister. As soon as it became possible Mrs. Adams joined her husband in London, and there her simplicity and refinement of manner gained her many friends. In 1789 Mr. Adams was elected Vice-president, and on March 4, 1797, he became the chief executive of the United States.

In every way, Mrs. Adams' sense and energy proved a blessing to her husband in his new position. Her grandson writes:—"That her opinion, even upon public affairs, had at all times great weight with her husband is unquestionably true, for he frequently marked upon her letters his testimony of their good sense." When John Adams first became President the capital was at Philadelphia, but just at the end of his administration it was removed to Washington. The "President's House" was not completed, but in 1801, Mrs. Adams held the first New Year's reception. The completed portion of the mansion was but partially furnished and the oval room upstairs, now the library, was used by Mrs. Adams as a Drawing Room. It is said that clotheslines were strung in one of the unfinished public rooms. Only four months of her life were spent in the Executive Mansion, yet she stamped it forever with her individuality. The picture of the first mistress of the White House stands vividly before us,—a wiry little figure with the piquant face and snapping eyes, framed in a cap of exquisite lace. In the midst of war, desolation, pestilence and famine, her buoyant spirit never forsook her. She never spared herself in any way when the good of others lay in the balance; and this self-sacrificing woman well deserves to be remembered for her heroism and simple dignity of soul. Her children always remembered her strong qualities of mind and heart.

DOLLY MADISON, THE BELLE OF WASHINGTON

The name of Dorothy Payne Madison, commonly known as "Dolly Madison," brings pleasant associations to our minds. She was the widow of John Todd, a Philadelphia lawyer, to whom she had been married while very young, and who soon died and left her with an infant son. When she first entered Washington society as the wife of the secretary of state, political feuds ran high and party spirit embittered many social relations,—but the beauty and charm of Mrs. Madison soon won her the devotion of all parties, and politicians put aside their quarrels to meet around her hospitable board. Her house became a centre of Washington society. Her cordial manners and winsomeness disarmed all criticism.

In 1808 Mr. Madison was elected President and Mrs. Madison gave all the strength of her nature to winning over her husband's political enemies as friends. In a buxom way, she was a beauty, and the sole aim of her life was to be popular and to help to render her husband's administration a success. She possessed the social charm her husband lacked. Every one liked her, no one could feel unkindly toward her.

The most important event in President Madison's administration occurred in his second term, when war was declared against Great Britain. In August, 1814, the British army landed on the coast and made a quick march to the capital. The President and his cabinet retired to Virginia; but Mrs. Madison remained behind in the presidential mansion, shudderingly straining her ears for the sound of the cannon at Bladensburg. A carriage was ready at the door, filled with household silver and government papers, and the President's wife waited only for her husband's instructions. At length a messenger arrived bearing a scribbled note from the President, and Mrs. Madison prepared to fly from the city. As she

was about to depart her eye fell upon the portrait of George Washington. She tore the picture from the wall, and ripped the canvas from its place. "Take care of that," she cried to some friends, "but destroy it before you let it fall into the hands of the British," and with that she was gone. The portrait was saved and is still one of the treasures of the White House.

A little later the British officers entered the White House, to find the place just deserted by the servants, the dining-table spread for forty guests, and in the kitchen a dinner steaming hot over the fire. But this did not save the city, and the President's house and other public buildings were burned,

THE FIRST WHITE HOUSE, BUILT IN 1800

as we may read on page 1399. Only the walls of the mansion were left standing. The house was rebuilt, and the walls were painted to cover the marks of the flames. This seems to be the reason why the building is now called the "White House."

At the close of Madison's second administration he withdrew from public life and spent the remainder of his years at Montpelier, in Virginia, where his wife gave him her untiring care until his death. She had given up the gay life of the capital with regret, and upon the loss of her husband she returned to Washington, where she spent the last twelve years of her life, loved and admired to the very last. Her house was the gathering-place of all the well known persons at the capital, of the young and gay, as well as of the more mature. When she died, the multitude of people who gathered around her grave to do honor to the dead, testified to the sincere affection she had won from rich and poor alike.

MARY TODD LINCOLN, THE WIFE OF A GREAT MAN

Abraham Lincoln was one of the greatest men America has produced, and naturally we must be interested in his wife. We are told that his first love, Ann Rutledge, died, to his great grief. After a time, in 1842, he married Mary Todd, a young woman of a Kentucky family, who had enjoyed greater social and educational advantages than had fallen to him. The marriage, however, was not a perfect union. Mrs. Lincoln loved her husband, and shared his devotion to their four sons, but she was never quite in sympathy with her great husband's views of life. More unfortunate still, she was not able to keep up with the growth of his wonderful mind.

He always treated her with the greatest thoughtfulness and consideration. At the time of his election to the presidency, she was the first person of whom he thought as soon as the returns indicated his election. "There is a little woman on Eighth Street who has some interest in the matter," he explained to some friends, as he excused himself and hurried off to his home with the news.

Mrs. Lincoln was much delighted at his election. She had always believed that the awkward lawyer was to succeed and now her great ambition was realized —she was to be the wife of a president,—the mistress of the Executive Mansion. Her appearance and manners

created a most favorable impression upon the people at the first levee held during the new administration, but unfortunately Mrs. Lincoln could not win or hold many friends. Ambitious and eager to be a social success, but without tact, she soon succeeded in offending many of those with whom she came in contact. She did not strive to help her husband, as Mrs. Madison had done with such great success. While her husband was bending under a burden of national cares that were almost too great for him to bear alone, she was thoughtless enough to bestow her favor upon some of those who were his political enemies, and to withhold it from the wives and daughters of his friends.

The summers during the war were filled with a terrible strain of public affairs. The man who was toiling to bring the nation to freedom and peace, sometimes became sad and weary and dispirited. His wife did not seem to realize the heavy burdens he was compelled to bear, and the society at Saratoga and Long Branch occupied much of her thought and mind. It would seem that she never understood the greatness of the man she had married.

MRS. FRANCES FOLSOM CLEVELAND THE BRIDE OF THE WHITE HOUSE

Now we come to the last of the famous mistresses of the White House of whom we are to speak, Frances Folsom Cleveland, the most beloved of the ladies of the White House since the times of Dolly Madison. Born in 1864, she grew to girlhood in the city of Buffalo, and as soon as she was prepared, entered Wells College, of which she is now one of the trustees. Here her unaffected charm of manner and the sweet wholesomeness of her character soon made her one of the most popular girls in that institution.

Upon the death of her father, in 1875, little Miss Folsom had passed under the guardianship of Mr. Folsom's law partner, Mr. Grover Cleveland. In constant association with this charming young American girl, Mr. Cleveland watched the unfolding of her character with a deep interest and admiration. In 1885 he became President of the United States; and June 2, 1886, he married his ward, who had flowered into a charming specimen of young American womanhood. The ceremony was performed in the White House. Several marriages had taken place within its walls, but no president had ever before been married there. Mrs. Cleveland was well fitted to fill the position to which she was raised. With a wonderful gentleness and tact, she delighted and charmed all who met her, and was soon universally loved and admired.

The position of hostess of the nation has its peculiar difficulties, which demand all the tact of a clever woman. Mrs. Cleveland tells one laughable story of an incident that caused her much embarrassment at the time. Adelina Patti, the famous singer, whom your parents perhaps remember, was visiting the United States and went to the White House to call upon the President's wife. They chatted together very pleasantly, but hour after hour passed, until even Mrs. Cleveland, the most cordial of hostesses, began to think that it was time for her guest to depart. Her guest seemed to think so too, but still she did not go. Finally it came out that, being accustomed to the etiquette of foreign courts, Patti was expecting to be dismissed. Mrs. Cleveland, who did not in the least think of herself as a queen, was courteously waiting for her guest to give the signal of departure.

Mrs. Cleveland was not only a charming woman, but also a wise and affectionate mother. Five children were born to the Clevelands, and one, the second daughter, Esther, has the distinction of being the first baby to see the light within the walls of the White House.

At the close of Mr. Cleveland's second term he retired with his family to Princeton, New Jersey; and from then until the day of his death, Mrs. Cleveland seldom left her husband's side. Though deeply absorbed in her home life, Mrs. Cleveland found time to identify herself vitally with all the broader interests of the Princeton community. Through all her varied experiences she has retained that sweetness of nature, which constituted her greatest charm. Mr. Cleveland died in 1908, and, in 1913, Mrs. Cleveland became the wife of Professor Thomas J. Preston, of Wells College, which she had attended when a girl, and in which she still takes great interest.

THE NEXT STORY OF THE UNITED STATES IS ON PAGE 521.

THE LARGEST WILD ANIMALS IN BRITAIN

This is the famous picture of wild cattle by Sir Edwin Landseer, the celebrated painter of animals. They still have in England some of the old wild cattle. They are as wild and as savage as the cattle of thousands of years ago were. They hide among the trees during the daytime and come out to feed at night. If you go near they will either run away or attack you. They now live in only a few places,

WHAT THIS STORY TELLS US

MOST animals are useful in one way or another, as we shall learn presently, but there are some that are so useful that we could hardly live at all without them. The milk in our tea, the meat on the dinner-table, most of the clothes that we wear, all come from animals. So that it is quite true that animals feed and clothe us. In this part of our story we read about the cows and sheep in the meadows, the pigs in the styes, the goats on the mountains, the deer in the forests, and the little rabbits in their burrows underground. Some of these animals are more useful to us than others, but each one lives and works for us, and we could not spare them without suffering the greatest inconvenience. We should always remember that these animals were made for our comfort and use, and that they serve a great and useful purpose in the world.

ANIMALS THAT FEED AND CLOTHE US

OX — GOAT — ANTELOPE — HARE
SHEEP — DEER — PIG — RABBIT

CONTINUED FROM 295

ONCE a man was riding in a train which was going very, very slowly. The man began to make fun of the slow old train. He called to the conductor. "You had better take that cow-catcher off the front of the engine," he said. The cow-catcher is the railing placed in front of the engine to push out of the way anything which happens to be on the line, and so prevent it from being run over. "What do you wish to do with the cow-catcher?" asked the conductor.

"Well, it is of no use there," said the man; "we are going too slowly to catch up a cow. You had better fix it on behind the train, for there is nothing to stop a cow from catching us and coming in to bite the passengers."

Of course, that was only his fun. Cows cannot bite us. Their teeth are not made for such a thing. Their teeth are made to eat grass and herbs, and to grind up the oil-cake which their masters give them.

There are many sorts of cattle, but in all of them the teeth are alike. We have about twenty different types of cattle in America; but though some are big and some are little, though some have long horns, and some have short horns, and some have no horns at all, their teeth are alike. They use their tongue almost as much as their teeth in gnawing off the grass in the field. They curl the tongue round the grass, and press it against their teeth, and then pull the top off the grass—they do not bite it off close to the ground as a horse or a sheep does.

At one time all the cattle were wild. Some of them were very big creatures indeed, bigger than any that are now living. By and by men began to tame those that were not too fierce, and for thousands of years cattle have been the good friends of men.

Those that were not tamed roamed the forests, or lived in the hills. They could not live wild near the homes of men. Their pastures were wanted for the tame cattle, and they were either killed or gradually died of starvation. There are still in England some of the old wild cattle. At Chillingham Castle Lord Tankerville has a herd of them in his park. They are as wild and as savage as the cattle of thousands of years ago were.

They hide among the trees during the daytime, and come out to feed at night. If you go near them they will either run away or rush out and attack you. There are some others like them in a park in Scotland, and another herd at Chartley, in Staffordshire, all shy or savage, just as the wild ones used to be.

In Ireland they have some more descendants of another type of wild cattle. These are small, and black, and tame, because for a very long

time they have been taken care of by men, and they know that men are their masters and friends. We could not manage at all without cattle. China is the only civilized country in the world where milk is not used. Everywhere else people use the milk of cows, or of reindeers, or of camels, or of some other tame animal. China is the one country where the people do not understand the use and value of milk.

THE LIFE AND USEFULNESS OF THE GENTLE COW

Without milk we could have no butter or cheese, and great herds are kept to supply us with all these articles of food. The milk from Jersey cows is richest in butter fat, but Holsteins, shorthorns, and other breeds give a larger quantity. Few Jersey cows give more than three gallons in a day, while many Holsteins supply four to six gallons. Less than two gallons of Jersey milk will yield a pound of butter, while nearly or quite three gallons from most other breeds are required.

Most cows are gentle and seem to like to be milked. Often the farmers' daughters do the milking, but in the great dairies men, dressed in clean white suits, milk the cows in their stalls. Generally the cows are herded out to pasture during the day, but return to their stables or barns late in the afternoon. Sometimes they are not allowed to go out to pasture, but have all their food and water brought to them.

There is something quite wonderful about the feeding of a cow. The animal has four stomachs. We remember how the camel can carry water in its stomach to be used when it is thirsty. The cow carries its food in somewhat the same way.

SOMETHING WONDERFUL ABOUT THE FEEDING OF A COW

If you watch a cow grazing you will see that, when she has eaten as much as she wants, she lies down. Look now at her throat, and you will see a little round ball of something making its way quickly along inside her neck to her mouth. This is the reason: While she is eating, the cow swallows the grass into the first stomach, which is simply a large pouch, where the food is stored for a time. The food is not yet digested, for herbs require a good deal of digesting. Soon the food passes into the second stomach. This one is full of little cells, like the honeycomb which a bee makes. The cells cause the food to roll up into many small balls, and these return one at a time, to the mouth of the cow as she wants them. Then she thoroughly bites this food, as good children bite theirs, and, having done so, swallows the grass again. That biting-up of the food is what we call "chewing the cud." Well, this time the food goes down into the third stomach, which is made up of many thin sheets of muscles. These prepare the food for the fourth stomach, where the work of digestion is finished.

When cattle were wild they had many enemies. Men and animals would chase them, so they would often have to gobble down their food and run for miles before it had time to digest. Unless they could go through the process of chewing the cud, this food would not give them strength, for food which has not been digested is of no good to anything. Therefore the four stomachs were just what the poor cow, amid the enemies who hunted her, ought to have. So nature gave them to her.

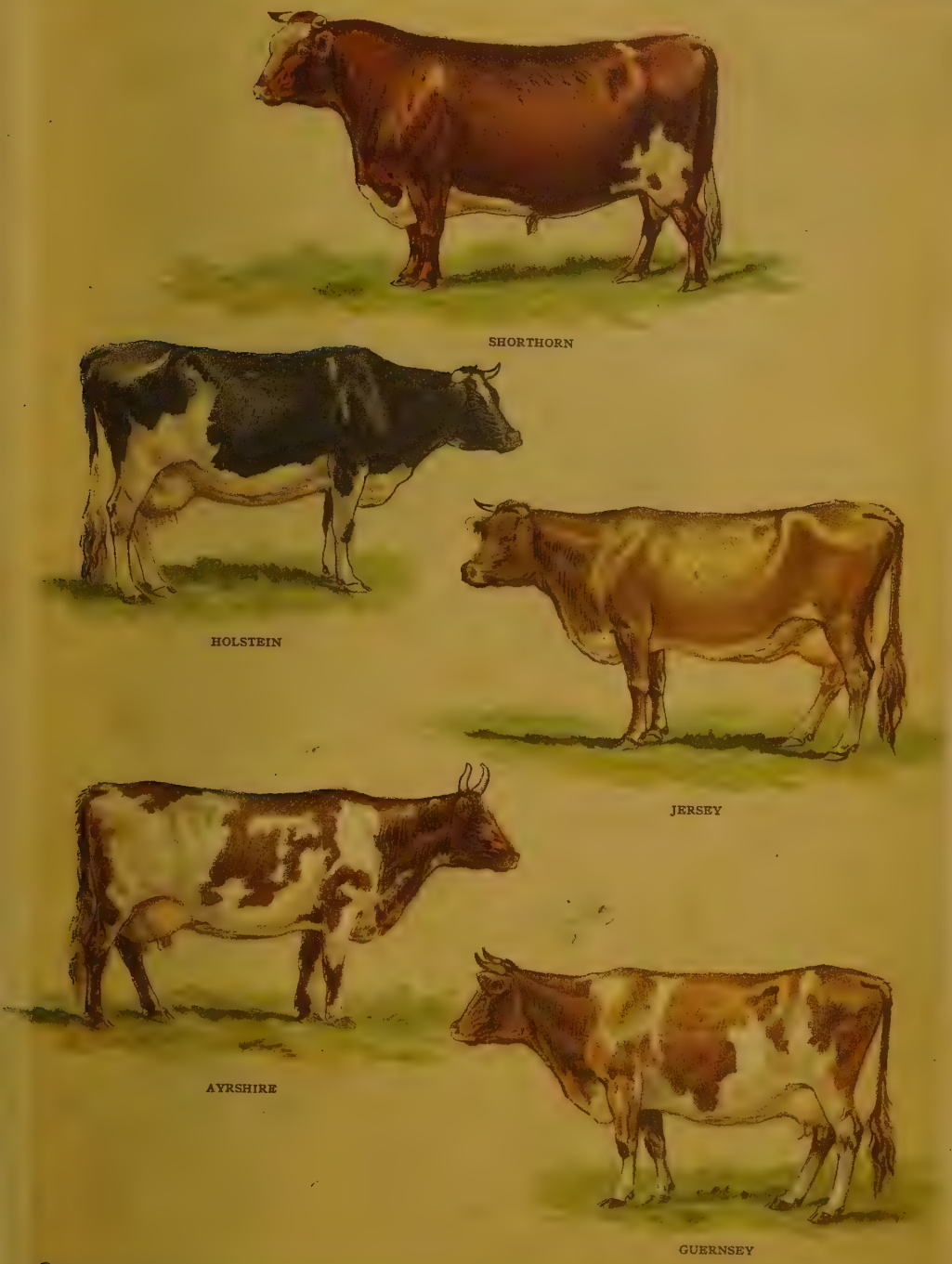
From the hides of cattle we get leather, which makes boots, harness, parts of furniture, and all sorts of other things. The flesh forms food for man.

THE MANY STRANGE USES TO WHICH CATTLE ARE PUT

But that is not nearly all the uses to which cattle are put. The hair makes bristles for brushes, and when it is curled it makes mattresses. The bones make handles for knives and other things, and chessmen and ornaments, and millions and millions of buttons. Some parts make soap and glue; other parts make gelatine for jellies; while others are turned to use as medicines, or as food for poultry. Even the bones, which cannot be used for anything else, are of value, for they are ground up and spread over the fields to make grain and fruit grow. The powdered bones make the strawberries big and red and sweet, and cause the tomatoes to swell and ripen. Strangest of all, some parts when treated by the chemist, make deadly poison, which, though it would kill us if we took it into our mouths, is valuable to the manufacturers.

Not so very long ago, oxen were used in both Europe and America to draw ploughs and wagons. In India great

SOME COMMON BREEDS OF BEEF AND DAIRY CATTLE



SHORTHORN

HOLSTEIN

JERSEY

AYRSHIRE

GUERNSEY

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Cattle vary greatly in size, shape and color. The Shorthorn is one of the best breeds for beef, though some of them give much milk. The dainty Jersey gives the richest milk and the Guernsey and the Ayrshire are also dairy breeds. The Holstein is large and heavy but, nevertheless, produces very large quantities of good milk. All of these breeds originated in Europe.

SHEEP AND CATTLE, TWO OF MAN'S BEST ANIMAL FRIENDS

Here are three curious sheep. On the left is the fat-tailed sheep from Asia, which often has a little sledge or a trolley with wheels to carry its big tail. In the middle is a merino sheep, which has a thick fleece, and on the right is a mouflon sheep with huge horns. Wild sheep often fight furiously.

There are about twenty different types of cattle in America; some have long horns, some have short horns, and some have none at all. Jersey cows give the richest milk, but other breeds give more. Cows not only give us milk and meat, but supply many other useful things.

The musk-ox lives in the frozen regions of North America, and is hunted by the Eskimos for food.

The Indian cattle have a hump on their shoulders and are trained to plough and to draw carts.

strong oxen draw the soldiers' heavy guns when they are marching to war. All over India cattle plough the land and draw the carts. The Indian cattle have a hump on their shoulders; and millions of Indian people think the cow is a sacred animal, and decorate it with costly ornaments, just as some women in this country decorate dogs.

THE ARCTIC OX THAT USED TO LIVE IN THE UNITED STATES

The most curious ox is the musk-ox, which lives in the frozen regions of North America. It has very wide horns, long blackish-brown hair, and feeds mainly on lichens, for it can get grass only in mid-summer. It goes about in small herds; and when in danger from bears or wolves the herd will run together in a solid bunch, the bulls facing out with lowered horns, and the cows and calves in the centre. It wanders to the northern-most Arctic islands, and is hunted by the Eskimos. In past ages, however, when the climate for a time was very cold there, musk oxen dwelt in what are now Europe and the United States.

If you have ever seen a pet lamb, you will remember what a gentle little creature it was. But when that lamb grows up and becomes a fine strong sheep, and goes to live with a flock of other sheep, you would soon learn that it is no longer timid and frightened. There is no other animal more ready to fight than a male sheep. They will rush out and butt at a strange dog or a strange man; they will fight bravely if a wolf comes to attack their friends; and they are so strong, and rush at an enemy with such force with their hard, tough heads, that they can knock a bullock down. When they are wild they fight so fiercely that they break off each other's horns.

THE HORN OF A MOUNTAIN SHEEP MAKES A BEDROOM FOR THE FOX

The horns of the great mountain sheep, called the argali, are so big that when one has been knocked off in this way a mountain fox or other small animal can make a home inside the horn. But the argali is one of the biggest of all sheep. It is four feet high at the shoulder. The mouflon is another of the giant sheep; and we have one which roams over the higher parts of the Rocky Mountains, and is one of the finest of American game animals.

It is supposed that all the sheep were once giants like these; that those which we now know have gradually changed their shape and their size and the nature of their wool through being for so long tamed and kept and fed by man. The sheep was probably the first animal, after the dog, which savage men of old time made tame; and the work of weaving the wool into cloth was one of the first things that they ever learned to do.

Goats and sheep all belonged to the same family, once upon a time, but see how different they are now. The goat is covered with hair instead of wool. Well, if sheep are long neglected and allowed to run wild, even now they lose their fine long wool and grow hair instead. In places abroad, where sheep run about a great deal in the mountains by themselves, they have a covering of hair in the winter. It is woolly, but real hair; and the proper wool is underneath, like *our* warm clothes underneath our outer garments.

THE MERINO SHEEP IN SPAIN, AND ITS WONDERFUL FLEECE

There are dozens of different kinds of sheep. All have horns when wild, but many of the tame sorts have none. Some have very long wool. With others the wool is short and curly. The sheep with the longest wool is the merino. The wool of this one has been known to weigh thirty pounds, while the wool of the average sheep weighs from three to eight pounds.

The merino sheep has its home in Spain, where it is guarded in flocks of thousands by shepherds and dogs. In the summer it is taken up the mountains, but when the winter draws near it is brought down into sheltered pastures. Many of this kind of sheep have been taken to Australia. In Australia the farmers have millions of sheep, and we get much of our wool from that great colony. There are so many sheep in Australia that the people cannot eat all the flesh, so they put it into ships which have rooms so cold that the flesh is frozen all the time it is there. Then it is sent to Europe. At the end of the voyage it is brought out of the ship hard as ice, but quite fresh and good to eat.

The funniest sheep in the world are the fat-tailed sheep. This sheep has a tail which weighs as much as a small-

It is supposed that all the sheep were once giants like the wild sheep of the mountains, but those living in the fields have changed their shape and their size and the nature of their wool, through being so long tamed and kept and fed by man. Sheep always love to climb about the rocks and hills.

It is a good thing for the wild goat that it is able to climb rocks where hardly anything else can go, for it has many enemies. It can live on very little indeed, but where there is plenty it eats everything. It is very destructive to young trees and vines, and has caused great havoc in the northern parts of Africa.

sized boy or girl. Some of the tails, without anything else, weigh as much as seventy or eighty pounds.

THE SHEEP WITH A CARRIAGE FOR ITS TAIL

The people who have this sheep live in Asia and in Barbary and in Cape of Good Hope. They think the tail so valuable that they will not let the sheep run the risk of injuring it. They make little sledges, and even little trollies with wheels, and tie these under the tail, so that, as the sheep walks, the tail is carried along without being hurt. The flesh of this tail is very fat and much liked.

Domestic sheep are many in number and in name. The most interesting are the black-faced mountain sheep. They have good wool and good flesh, yet the sheep itself lives on little food, and that of the coarsest kind which grows upon the rugged hills. Once some of these sheep were buried in snow for five weeks on a mountain-side, yet when dug out they were still alive.

The mountain sheep are clever at climbing the hills and rough rocks. If you are spending a holiday in Wales among the hills you have to be careful that the sheep high up the mountain-side do not loosen a big stone and send it rattling down on to your head. Once, when some people were climbing a hill in the Lakes, they heard stones rattling, and a funny shuffling noise. When they got higher up they found that there were some dear little mountain lambs playing hide-and-seek among the great rocks. There was plenty of grass for them to make merry on, but there they were galloping up and down the rocks, and skipping and bounding like children let out to play.

King David wrote about the lambs skipping at their play, so we see that this is not a new habit of the lamb.

THE STRINGS OF THE VIOLIN COME FROM THE SHEEP

The best mutton is that of the Welsh mountain sheep and the sheep which are called Southdown sheep. The Southdown sheep eat the sweet, short grass of the South Downs of England, and in the grass there are millions of tiny little snails, very clean and healthy, of course, but still real snails. And the sheep eat them as they nibble the grass.

Besides wool we get fine leather from the sheep for gloves and for the covers of books. The strings of the violin, which makes the loveliest music in the world, are made from the inside of the sheep. It is called catgut. These Southdown, and other English sheep, with the Spanish merinos, are the stock of American flocks.

It is a good thing for the goat that it is able to climb rocks where hardly anything else can go, for it has many enemies. A great man once said that Satan created the goat. That, of course, was silly, because the goat is descended from the same sort of animals from which ages and ages ago, the sheep descended. But it is a wicked little rascal when allowed to run wild. Although it can live on very little indeed, where there is plenty it eats everything before it. It destroys shrubs and young trees and vines, so that in time it will ruin a whole forest or vineyard. In olden times the heathen used to sacrifice goats to the god of wine. Still, it is a splendid creature when it behaves itself.

THE GREAT GOAT THAT LIVES ON THE HILLS OF ITALY

The best of all the goats is the ibex, which lives in the great mountains of Italy. It has huge horns, and, if it cannot run away when attacked, it will bravely rush at its enemy and, if it can, knock him down the side of the mountain. There is no place too steep for it to climb. It can leap from crag to crag with marvelous power and sureness. But men cruelly hunted it so much with guns that the ibexes were nearly all killed. It was only when the King of Italy said that no more should be killed that any were saved. The Cashmere goat and the Angora goat give beautiful wooly hair, from which shawls and other things to wear are made. The wigs worn by British judges and lawyers are made from the hair of white goats.

The tame goats give splendid milk. It was the milk of the goat that the men and women in the Bible used to drink. The goat can be trained to do tricks, and is a merry playmate. It is rather apt to toss you in play, but if you can catch hold of the little beard under its chin it will be as good as a lamb.

HANDSOME DEER & ANTELOPES WITH BEAUTIFUL HORNS

The ibex is one of the biggest of the goats, and has huge horns. It can leap safely from crag to crag.

The wapiti is a handsome though savage deer, which feeds boldly in the daytime, and, if attacked, rushes at its enemy with its long, sharp antlers lowered and gores him to death.

These are both antelopes, though one is very tiny and the other very large. The pigmy antelope, on the left, is only a few inches high, but the eland is as large as an ox, and stands six feet high at the shoulder.

The red deer in Scotland are allowed to roam about forests made for them. They are much more wild and savage than the park deer in England, and are larger and have handsomer antlers.

The chamois lives in the highest parts of the Alps, and is difficult to catch or shoot owing to its fleetness.

MOOSE, ELK, AND OTHER SORTS OF DEER OF NORTHERN LANDS

In the far North live the reindeer, which in Lapland and Siberia are trained and taught to draw sledges and to give milk like cows; the same kind of deer abound in Canada, but are all wild and are called caribou. Another great northern deer is the one called in Canada, moose, but in Europe, elk. We have an "elk" in America, but it has wide-branching round antlers, not flat ones, like the true moose-elk, and is really like the red deer or stag of Europe and Asia; its proper name is wapiti. It used to be found all over the country west of the Alleghanies, but now exists only in the northern parts of the Rocky Mountains.

The moose is the deer of the Canadian forests, and carries an enormous pair of antlers, as broad as those of the wapiti, but flattened towards the ends into great shovel-like plates, with which, indeed, the moose often shovel away the snow in winter. It eats branches from trees, and even pulls down saplings.

When it is pursued it runs swiftly through the forest, and, so that it shall not be caught in the trees, it holds its head up and lays its great horns flat down on its back. It can swim splendidly, and, like the crocodile, it loves to rest in the water of a pool on a hot day with only just the tip of its nose in the air.

More familiar in North America are the small reddish eastern deer, which run wild in every state of the Union. In the West, it is called white-tail; and a larger deer is known as the blacktail.

ANTELOPES AS SMALL AS A DOG AND AS TALL AS A MAN

The antelopes are very much like deer. There are many varieties of them. One antelope, called the guevi or pigmy antelope, is only eight or nine inches high. Others, like the beautiful chamois, which lives in the mountains, are bigger and stronger.

The biggest of all the antelopes, such as the eland, are six feet high at the shoulders—as tall as a tall man. Most of the antelopes live in Africa, though there are fifteen sorts living in Asia. In the wilder parts of Africa there are vast herds of antelopes, and when the plains become dried up for want of water, the animals go into the parts inhabited by men and eat up all their crops. Their flesh is good for food, and their hair and hide are of much use in the service of man.

Deer are not allowed to roam free and wild in Britain now like they used to roam in the days when stupid kings of England thought it was more important to have forests full of wild deer and wild boars than lands filled with houses and gardens for men and women and children. Some people have many beautiful deer in their parks, and these deer are tame with those they know, although savage at some parts of the year.

The biggest deer forests are in Scotland. There the deer are allowed to roam about forests which are made for them. Men fence in miles and miles of ground and plant millions of trees, so as to make the deer feel that they are living in wild forests like their ancestors did. These are wilder and more savage than the park deer in England. The red deer and the roebuck are the most numerous in the hills of Scotland. The fallow deer are more often seen in English parks.

HOW THE DEER LOSES ITS HORNS IN THE SPRING

Whenever you see a picture of a stag, you always notice what fine horns it has. It looks so proud of them. Do you know that those horns drop off every year, just as the bright feathers come out of the peacock's tail? Although the horns get bigger and bigger each year, they are new every season. When a herd is being made up by the stags and does, the males fight dreadfully with their horns. Once the fighting is over, there is little need for the antlers, so they drop off. Then, at the beginning of another year, the horns begin to grow again.

At first the bone is covered with a soft skin, which is called velvet. This protects the bone until it is big and hard. Then, when the antlers are getting well grown, the stag rubs them against the trees to wear off this velvet, and by the time a new herd is to be made up there are the new antlers, handsome and strong, and ready for battle if they are needed.

We are not quite fair to the pig. We

THE HARE AND THE RABBIT, WITH TAME AND WILD PIGS

The wart-hog is an ugly wild pig, with tusks and great knobs on its face. It lives in a hole in the ground.

The wild boar, which has strong tusks, will attack a man or a horse, or even a lion or tiger, and it is so strong that it is often victorious. In India officers hunt the boar.

Hares and rabbits are good to eat, and their soft fur is used for clothing. The animal on the left is a hare, which lives in the fields. European rabbits make holes in the ground, and numbers live together.

The peccary is a little wild American pig, and is very clever. Peccaries go in armies.

The flesh of the pig makes bacon and ham; its fat makes lard; its skin makes the leather used for saddles, and its hair makes bristles for brushes. So it is one of our friends.

The babyroussa is a curious wild pig, with tusks that grow right round in a ring and often pierce the forehead.

speak of it as if it were the dirtiest and most stupid of animals. The truth is that it is not more dirty than the rhinoceros and other great beasts which live in marshy places. It likes to cool itself, so stupid men think it likes to live in a filthy sty. They make the pig dirty by keeping it in such places.

THE GREAT ARMIES OF LITTLE WILD PIGS

It is true that the pig will eat almost anything—coal, for example. It is a hungry animal, and must be nearly always eating when not asleep; so if it cannot get clean things to eat in its sty, it gets used to eating nasty things, which make its flesh bad for food.

Little wild American pigs are called peccaries. These peccaries live in South and Central America, and up to Western Texas. They are black with a whitish collar-mark. They afford great sport to men who hunt them on horseback, but often with danger to their dogs, who find the little pigs armed with tusks like daggers. The wild boar of India will attack a man or a horse, or even a lion or tiger, and is so strong, and has such a tough bristly skin, that it is very often victorious. Once a hunter found a tiger and a wild boar which had been fighting. They had fought till they could fight no more, and had lain down side by side and died.

One wild pig, called the wart-hog, has a trick which no other animal knows how to do. It lives in a hole in the ground. Now, if an enemy comes to catch the wart-hog, he will be sure to stand at the hole, to be ready to strike as soon as the pig comes out.

A WILD PIG THAT TURNS HEAD OVER HEELS TO SURPRISE ITS ENEMY

The wart-hog knows this, so he does not rush straight out. He runs to the mouth of his burrow, then he gives a great spring and turns head over heels, and comes down on the top side of the hole. This takes the enemy by surprise, and enables the wart-hog to charge first.

The wart-hog gets its name from the fact that on its snout are large horny points, like great warts. The peccary has short tusks, but they are as sharp as knives. Some of the tame pigs have tusks, with which they can inflict bad wounds when they are angry. The most curious wild pig is called the babyroussa. It has legs rather like a deer's. It has a smoother skin than other pigs, and four tusks; two curve up from the lower jaw, and two more grow out of the upper jaw and bend back towards the forehead.

In the East people do not eat the flesh of the pig, neither do the Jews. In Africa natives who will not eat tame pigs enjoy the flesh of the wild ones.

The flesh of the pig, when salted, makes bacon and ham; its fat makes lard; its skin makes the leather used for saddles, and its hair makes bristles.

There are many other animals which help to feed and clothe us. The hare and the rabbit we all know, for their flesh is good to eat, and their soft fur is much used for making clothing, though it is often dishonestly called a fur of another name. The hare is not "mad"; it is really a clever little animal. It lives out in the ploughed fields, and has many foes.

HOW THE HARE DODGES THE ENEMIES THAT PURSUE IT

To escape these, it runs very swiftly over rough fields, upon which others cannot run quickly. If hard pressed, it turns back like lightning, and, jumping far aside, will hide until the dog, or whatever it may be, has gone past. Sometimes it will swim in a river or in the sea to escape.

The rabbit is one of the commonest wild animals in Europe. It makes a hole in the ground near a wood or on a hillside, or among ferns, and lives a happy life. If there is plenty of grass and other herbage, it will be content where it is. If there is none, it goes to look for food in gardens, and then does sad damage, for it not only takes what it wants to eat, but it bites off and kills many other things in its play. In America there are several kinds of hares and rabbits.

In Australia they have large numbers of rabbits. Once there were none there; but men took some, and they have so increased in numbers that they ruin the farmers by eating the crops. No farmer can hope to succeed in his work until he has fenced in all his land with high netting. Now many thousand rabbits are killed every year and sent to Europe.

THE NEXT ANIMAL STORIES ARE ON PAGE 507.

This picture gives us an idea of the size of the gas pipes used in the main lines.

WHERE THE GASLIGHT COMES FROM

CONTINUED FROM 340

As we go about the well lighted streets of our towns and cities in these modern times, it is difficult to realize that only a hundred years ago there was practically no such thing as street lighting. Washington never saw a gas lamp. In his day the houses of the rich were lighted by candles made in molds, or with wax candles for state occasions, while poor people had to content themselves with the light of a tallow dip, or else the firelight. Dim lights were hung here and there on the streets, and if a citizen went abroad on a dark night, he carried his lantern with him. Good street lights are to us such familiar things that we can scarcely realize the eagerness with which our grandparents, when they were children, watched for the lamp-lighter. How it fascinated them to see him put his little ladder against the lamp post and run up the steps, and how they wondered where he got the lights which shone like stars along the dusky street.

Where does the gaslight come from? Our first thought, of course, is that it is imprisoned in the gas-pipe like the genii in the bottle. When we turn the key that holds it fast, it rushes out, eager to escape, and the moment we touch it with a flame it burns brightly. Before it reaches the pipe, however, it has to go through a long, troublesome process, and to learn its full story we must turn to another part of the book and read about the coal from which the gas is made. Before we go any further, let us try a simple experiment.

Take a long clay pipe. Fill the bowl of it with tiny pieces of nice, bright, soft coal. Then cover the coal with clay tightly fixed into the top of the bowl. Now ask your father to put the bowl of the pipe into the bright, red coals of the fire, leaving the stem of the pipe sticking out towards you. If you watch for a moment or two you will see a thin stream of smoke come out of the stem of the pipe. That is gas, and it has been drawn from the coal by the heat of the fire around the pipe. Though of course gas making is a much more complicated process, this little experiment gives us the principle of the work, and if we put a flame to the gas which comes from our pipe it will burn.

Remember that for this experiment you must use bituminous or, as we often call it, soft coal. This coal is used by gasmakers to make coal gas because it is richer and gives away its gases more easily than anthracite. Anthracite, which is nearly all carbon, is used to make water gas, but that is another story, and coal gas comes first.

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How the gas is drawn from the coal

Now let us pay a visit to the gas works, where, first of all, we shall see a number of hollow tubes, called retorts, set in groups. In some places the retorts are made of iron, but in this country they are made of fire-brick. In these the gas is made, and our pipe experiment will help us to understand how it is done. In front of the retorts, or at a little distance below them, a large fire is made. When this fire is a glowing mass of heat, air, or air mixed with steam, is forced up through it, and, mingling with the gas which comes from the coal, creates a new gas which gives great heat. This hot gas from the fire is carried up through pipes into a closed chamber round the retorts, and is again mixed with air so that when the oxygen in the air burns it may supply still more heat. The retorts have been charged with coal, and as the fierce heat beats against their sides the coal is broken up into the parts of which it is made. The solid carbon, which we call coke, is left behind; but all the other parts rise in a heavy vapor-like gas which finds its way out of the retorts, just as it did through the stem of your pipe.

How the impurities are removed from the gas

The pipe through which the gas leaves the retort carries it into a tank of water, which robs it of some things that cool quickly, and these are left behind in the form of ammonia and tar.

It is, however, not pure enough. It still holds many things which are injurious to metal work and hangings, and which we can use in other ways. So from the tar extractor, where it loses the greater part of its tar, it goes through washers to the condensers where it is cooled, the last traces of tar are removed, and the water vapor which it holds is condensed or turned back to water. From the condensers it goes through processes called washing and scrubbing, and finally it is forced up through purifiers filled with lime or oxide of iron, which causes it to lose the last of its impurities—a gas which has the long name of sulphuretted hydrogen. From the purifiers it passes into the meters where it is measured, and at last it reaches the gas-holders,—the ugly iron tanks which we know so well.

Now let us go back for a moment to see what becomes of all the things that have been taken out of the heavy vapor to leave it the colorless gas that burns so brightly. All these things are useful and none should be wasted. Tar, as we have seen, comes from it, and ammonia. From the tar are made the colors with which your dress or suit, or your little sister's hair ribbon is dyed. Benzine and carbolic acid are made from these by-products, and so are alum, many of the medicines that we get from the druggist, and a hundred things that are useful in many ways to the chemist.

If coal gas had never been made, we might have had no big guns, for the picric acid which helps to make the high explosives in these guns is obtained from carbolic acid. Delicious perfumes, which we can scarcely distinguish from the perfumes made from flowers, also come from what is left over when gas is made; saccharine, which is at least three hundred times as sweet as sugar, is also made from it; paint is another product. It is as if the forests that covered the earth, when no man had set his foot on it, had stored up all the good things they had gathered from the light and air so that we might enjoy them in these later days.

Benzene, or benzol, is the part of the gas which gives it its highest illuminating power. Some of it is carried off with the tar, but the greater part remains in the gas to give light when it is burned. Recently, however, as much as possible of this valuable product has been removed in some places, especially in Great Britain. The benzol has been needed to produce toluol, which is used in high explosives for big gun ammunition.

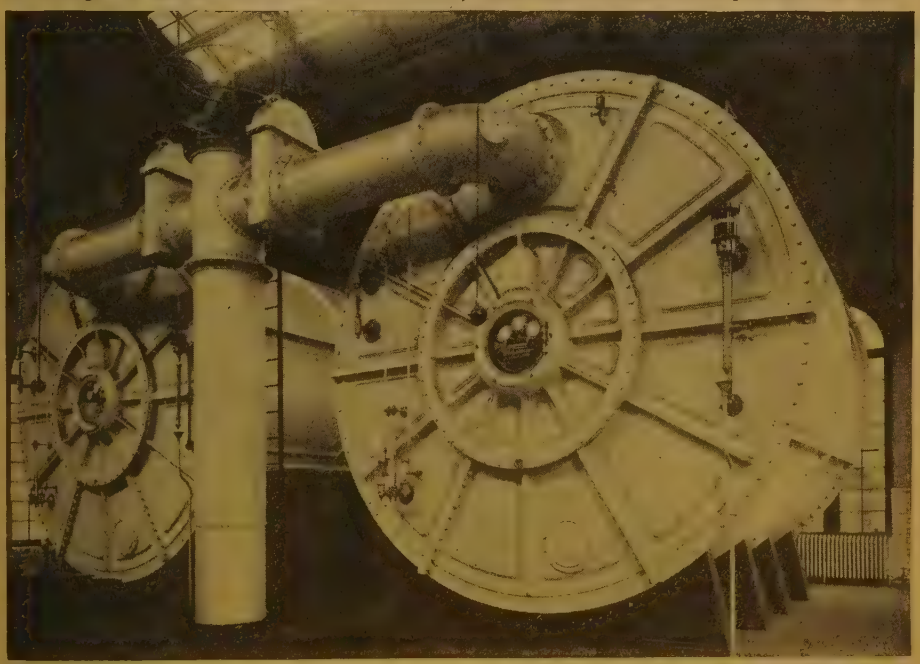
The removal of benzol does not reduce the heating powers of gas. It would, however, make the gas very poor for lighting purposes if it were not for the invention of the Welsbach lights or gas mantles which most of us now use in our gas lamps. When we use them, our rooms are illuminated, not by the light of the gas, but by the incandescence given to the mantle by the burning of gas within it.

The making of water gas

A great deal of the gas which is used in this country is what is called water gas, or, to give it its full name, carburetted water gas, and is made in quite a different way from coal gas. Very often

WHERE THE GASLIGHT COMES FROM

Here are the retorts in which the coal is cooked. The machine on the truck opens the doors of the retorts, pushes out the baked coal, called coke, and fills the retorts with fresh coal. The fire which bakes the coal is fed through the white doors on the ground. The small picture shows an end view of a bench of retorts cut through the middle. Underneath is the fire-box, from which the heat flows up around the retorts.



This shows two of the great meters which measure the gas as it flows from the purifiers into the tanks or holders in which it is stored for use. The gas rises in the centre pipe, and its flow to the meters can be controlled by the mechanical contrivance which we see close to the openings into the pipes, which lead into the drum. The dials in front of the meter show the quantity of gas which has flowed into the tank.

both kinds of gas are made by one company, and the two combined for use in lighting and heating our houses.

In the making of water gas, steel, brick-lined chambers, called generators, are used instead of retorts, and the coal is not distilled. The generator is filled with fuel, usually coke or anthracite coal, to a depth of about seven feet. This fuel is set on fire, and air is forced up through it until the whole mass has reached a glowing or incandescent heat. When it has reached this stage the air is shut off, and very hot, dry steam is forced through the fire. As the steam comes in contact with the hot carbon, it is decomposed, that is the hydrogen and oxygen fly apart, or dissociate from each other. The hydrogen is set free, the oxygen in the steam joins itself to the carbon, to form carbon monoxide and a new gas called "water gas," is formed by the carbon monoxide and hydrogen. The process of forcing air through the hot coal to create more heat, is called a "blow;" forcing steam through the fire to make the gas is called a "run"; and "run" and "blow" follow each other regularly as long as the process of gas making is going on.

The water gas, which is thus made, will burn with a blue flame, from which it receives its name of "blue gas," but to enable it to give light it must be enriched by having more carbon added to it, and this is the next step in the process.

From the generator, the gas is carried into another steel chamber, called a "carburetter," which is not only brick-lined, but is filled with bricks which are built up in an open checkerwork, and these bricks are heated by the gas during the blow until they are white hot. As the gas is led into the carburetter, oil is sprayed, from the top, down through the bricks, the heat of which turns the oil into gas. This gas, which is very rich in carbon, combines with the water gas, which is now pouring into the chamber, and the union of the two produces a mixture which is very like coal gas, and possesses higher illuminating qualities.

From the carburetter, the gas is carried into still another chamber which is called a "superheater," and here it is brought to a yet higher temperature, in order to "fix" the mixture, that is to make the gas permanent.

It is then washed, scrubbed and cooled; the tar which is got from the oil vapor is taken out, and it finally goes through very much the same process of purifying as the coal gas we have already described.

In the making of coal gas, the gas flows from the retort without stop. The making of water gas, however, is intermittent. In other words, there is a pause in the "run" of gas while the heat of the fire is being raised by the "blow". Consequently water gas requires two holders. A little more than midway in the process of purifying, it is collected in what is called a "relief holder." From thence it can be sent in a continuous flow through the rest of the process into the storage holders or tanks.

How gas is carried to our houses

If you look at these tanks you will see that they are supported in a framework. Really they are inverted tanks suspended over a quite deep well of water. The gas is lighter than air, and when it rushes into the gas-holder, it forces its way up. The gas-holder, though it looks heavy, is so nicely balanced that it rises with the gas until it is full. As the gas leaves the gas-holder, to come to our houses, the gas-holder sinks slowly down again into the water. The gas-holder is always pressing down upon the gas, and this forces it into the pipes.

These pipes are made of iron, and are placed deep down in the ground. They are very strong and carefully fitted, end to end, or else the gas would leak out and be wasted. Wherever there are gas-lamps, we may know that somewhere underneath the streets big gas-pipes have been laid. When the pipe reaches the house, smaller pipes must be laid, so that they reach all the rooms. They are laid under the floors or inside the walls, and come out through openings made in the walls or ceilings. Short lengths of brass pipe are attached, pretty fixtures are screwed on, then all we have to do is to turn the key and light the gas, and the darkest room becomes bright. The same gas will heat the oven in which your dinner is cooked. It will drive an engine, just as steam does. It will warm the greenhouse, and keep the plants snug and cosy in the winter. It will make the water warm for your bath, and will burn brightly all night in street lamps.

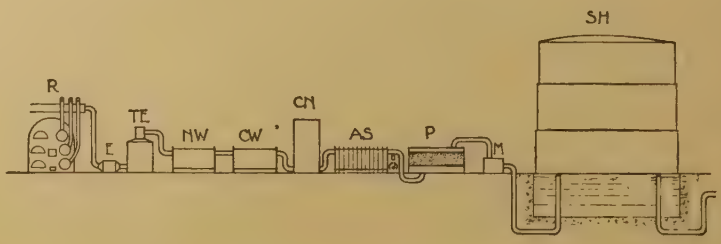
THE NEXT STORY OF FAMILIAR THINGS IS ON PAGE 649.

HOW GAS IS BROUGHT TO OUR HOUSES

From the meter the gas is led into a holder. These holders are built on almost the same principle as a telescopic cup, except that they are so made that between each section water is carried round the tank to seal the gas. The mouth of the holder is sunk in a well of water. As the gas is lighter than water, the water in the well seals it at the bottom, and prevents it from escaping through the cement to the ground.

From the holders, the gas is forced into large pipes like those that you see on page 415. From these main pipes it goes into smaller pipes which distribute it through the streets, and from the street pipes it flows into still smaller pipes through which it is carried into our houses. This picture gives us an idea of the many miles of pipes, large and small, which compose the network of gas lines that underlies our city streets.

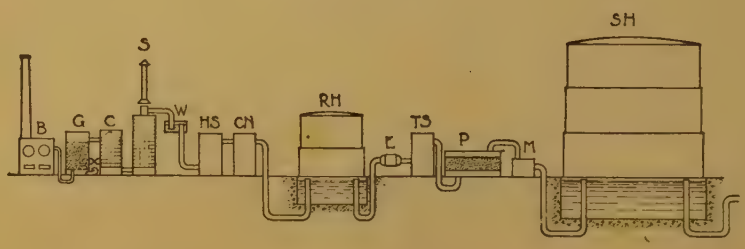
WHERE THE GASLIGHT COMES FROM



R - RETORTS
E - EXHAUSTER
TE - TAR EXTRACTOR
NW - NAPHTALENE WASHER
CW - CYANOGEN WASHER
CN - CONDENSER
AS - AMMONIA SCRUBBER
P - PURIFIER
M - METER
SH - STORAGE HOLDER

DIAGRAM ILLUSTRATING MANUFACTURE OF ILLUMINATING GAS BY THE CARBONIZATION OF COAL

You see here a diagram in miniature of one of our large gas-making works. First come the retorts from which the gas is drawn by the pump in the exhauster. Then comes the tank in which the tar is taken out, and after that we are shown the process of washing out the impurities before it is brought into the condenser to have the water vapor removed. Then it goes through more scrubbing and purifying.



B - BOILER HOUSE
G - GENERATOR
C - CARBURETTER
S - SUPER HEATER
W - WASH BOX
HS - HOT SCRUBBER
CN - CONDENSER
RH - RELIEF HOLDER
E - EXHAUSTER
TS - TAR SCRUBBER
P - PURIFIER
M - METER
SH - STORAGE HOLDER

DIAGRAM ILLUSTRATING MANUFACTURE OF ILLUMINATING GAS BY THE DECOMPOSITION OF WATER IN THE PRESENCE OF CARBON AND BY THE ADDITION OF HYDROCARBON GASES OR VAPORS

The diagram above tells us briefly the story of coal gas. This diagram in the same way tells the story of water gas, so that you may see the difference in the process. It gives us a very good idea of the way in which the steam goes through the bed of hot carbon, and shows how the gas is enriched by oil.
All pictures by courtesy of The Consolidated Gas Co. of New York.

THE BALLOON RISES FROM THE GROUND

The balloon is pulling at the sand-bags, anxious to get away, but the sand-bags, by which it is fastened to the ground, hold it down. Now, raised a little from the ground, it looks at last like a balloon.

The car, in which the passengers ride, like a huge wicker basket, is fixed to the bottom of the balloon, hanging by the cords, and the balloon floats about in the wind. In a few minutes it will leave the earth.

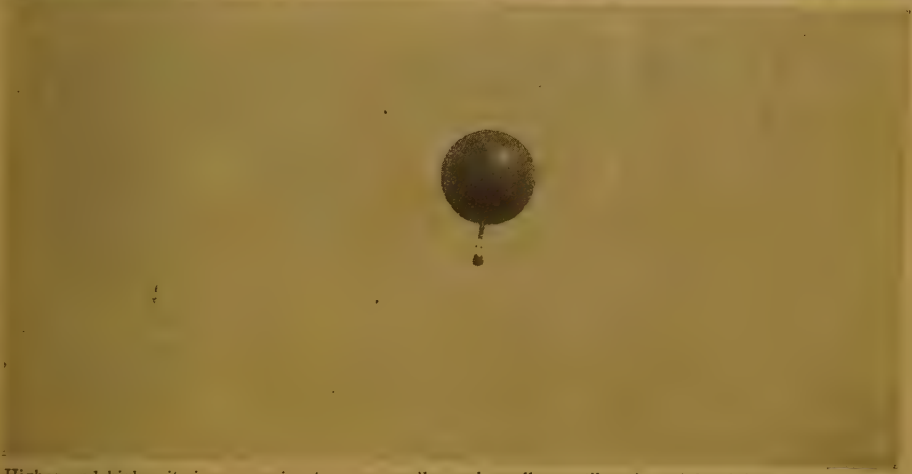
THE PASSENGERS ENTER THE CAR

The passengers are in the car, and the last preparations are made for the ascent. The workmen remove the sand-bags. The ropes that will be wanted when the balloon descends are hung upon the basket.

The balloon begins to go, eager to rise into the skies. The men steady it as it rises, and the balloon carries with it still one or two bags of sand, which it can empty out if it is necessary to lighten the load.

THE BALLOON IS IN THE CLOUDS

The balloon rises rapidly, above the people and trees, high into the air, until we see it in all its beauty.



Higher and higher it rises, seeming to grow smaller and smaller, until we lose sight of the people in it, and the balloon is like an apple in the sky. Higher than a bird it goes, sailing gracefully through space, and filling our minds with wonder that man has made so beautiful a thing to carry him in the skies.

THE NEXT STORY OF FAMILIAR THINGS IS ON PAGE 649.

HOW THE WATERS CARVE THE EARTH

This picture of the Yellowstone Park in America shows how water carves great valleys out of the earth. Water is always moving and has been moving ever since the earth became cool enough to have water upon it, and in its endless round it has been ceaselessly making and remaking the face of the earth. Water has dissolved and washed away all the land that once filled up the great valleys in this picture.

This arch of rock shows how water wears away the earth. When the tide is high and the waves beat fast, the water melts the rock as hot tea melts sugar, though much more slowly. Some day the rock may be worn away completely, and this beautiful picture of water through a natural arch will be seen no more.

WHAT THIS STORY TELLS US

WE come in these pages to the actual shaping of the earth. We have seen how a fiery cloud became the great earth-ball on which we live. But the earth is not even and smooth like a ball. There are great hollows in it filled by the seas, and great mountains rising into the clouds. What made these ocean beds? How were the mountains formed? It was thought at one time that the earth had been shaped by great storms and explosions, and shocks of many kinds; but we know now that the mountains and valleys and ocean beds, the precipices and gorges and caves, have all been made by slow influences working from the beginning and working now. We read here how the shape of the earth is always changing, and how the sea and the land are always changing places.

THE SHAPING OF THE EARTH

CONTINUED FROM P. 325

AFTER the making of the moon, the cooling of the earth would still continue, as indeed it is continuing at this very moment. At last there would be formed what men call the crust of the earth; and since this would really be hard and dry, it might quite properly be called a crust. This goes right round the earth, and we must not imagine that it has breaks in it where the oceans are. Doubtless it is thinner there just in proportion as the oceans are deep, but the crust of the earth still forms the bed of the ocean; and so all the lands are really one under the sea.

Now, the crust of the earth is not even and smooth. You might imagine that if the earth, covered with melted rock, gradually and evenly cooled, the surface might be quite smooth and regular. But you must remember that whilst this cooling is going on there are many other things at work which are carving the face of the earth. In one age the most important instrument of this carving might be the flowing of water, and in another it might be the action of heat. But, in any case, the face of the earth is not a constant thing, but has always been changing, and is even now changing from hour to hour. Even within the memory of living man, the sea has broken down and destroyed a great deal of the east coast of England, and there are places near the south coast of England, now stranded high and dry, which were once flourishing ports beside the sea.

Now, though the subject is rather difficult, we must inquire at least a little into the various kinds of forces that have been molding and changing the surface of the earth from age to age; and, first of all, let us get into our heads and keep there a fact which men long denied.

This fact is simply that the history of the crust of the earth, though it has been a history of constant change, has been, on the whole, a peaceful history. It used to be thought that the history of the earth had been made by a number of great disasters, each of them making a new state of things which stayed unchanged until a fresh disaster occurred. Now, very possibly, there have been some big disasters in the earth's history. It was some very great force, perhaps, that threw up the Himalaya mountains.

Even nowadays, when the earth is getting cool, there remain some active volcanoes, and small earthquakes are quite common. But, nevertheless, we may be sure that sudden and great disasters like these have *not* played a very great part in the earth's history. Change has been slowly but always going on. The poet tells us that "Constant dropping weareth away a stone;" and that is the kind of force which has for so many ages been carving the face of the earth. Not a great

disaster one day, and then no change for a thousand years, but constant dropping every day and all day. This idea of the quiet but never-ceasing way in which the history of the earth's crust has been worked is one of the most important ideas that we must have on this subject.

It is true, not only of this subject, but of Nature's story generally. The old Romans knew this when they said: "Nature does nothing by jumps." Her way is slow and sure; though she rarely does anything startling, yet she never takes a rest. And that is the way to succeed.

Well, then, amongst the forces which have molded the crust of the earth we must count, first of all, the force of gravitation itself, for remember that all the while this earth is shrinking, shrinking, shrinking. As the interior shrinks, you will understand that the outside will become too big for it, and will not be sufficiently supported underneath. So a great many things would be apt to happen.

For instance, quite a large part of the earth's surface may begin to collapse, subside, or sink. Then, of course, if it goes on doing this long enough, the water will rush in upon it, and what was once dry land may become the bottom of the sea. Then, again, as the surface of the earth shrinks, and finds itself not sufficiently supported from below, it may shrivel—that is to say, it may become folded. And do you not see that one of these folds might make a long range of mountains?

HOW THE SEA IS WASHING AWAY THE SHORES OF ENGLAND

The coast of England is being slowly worn away by the sea. In many places houses have been swallowed up. Here we see the breaking away of the coast at Holderness, where the sea-front looked like this after a gale.

Now, just as the surface of the earth will sink in one place, so it may become pushed up in another. One of the ways in which this may happen is by the folding. Therefore, just as what was once dry land may become the bottom of the sea, so also the very bottom of the sea may be gradually raised up until the water runs away from it, and it becomes dry land. All England has been at the bottom of the sea, and so was much of North America. It is hard—is it not?—to think that more than half of Europe and America were once covered with ice; to believe that Broadway and the Strand, Himalayan and Cordilleran summits even, were once the floor of the ocean. In his greatest poem Tennyson has expressed these facts, and done so in such simple and clear language that we may quote his words:

There rolls the deep
where grew the tree.
O earth, what changes
hast thou seen!
There, where the long
street roars, hath been
The stillness of the central
sea.

The hills are shadows, and
they flow
From form to form, and
nothing stands;
They melt like mist, the
solid lands,
Like clouds they shape
themselves and go.

Another of the great forces that have made the surface of the earth what it is to-day has been heat, or fire. We are quite sure even now that the inside of the earth is very hot. If we dig into the ground we find that it becomes hotter and hotter as we go down, and every time that a volcano spouts out liquid lava it reminds us of the terrible heat that is beneath us. We live, then, on a crust that spans a glowing lake of fire, and on a crust that is very thin.

If we paste a sheet of paper over the surface of a good-sized melon, we should have the relative proportions. Men who study the rocks are able, without much difficulty, to tell which kinds of rocks have been formed under the influence of heat or fire. The Latin word for fire is *ignis*, and so these rocks which are amongst the deepest layers

STRANGE PILLARS OF ROCK AND ICICLES OF STONE

These cliffs in the Isle of Staffa, off the coast of Scotland, are made of wonderful pillars of black rock called basalt, formed ages ago by the action of fire. There are many thousands of them.

In some parts of the world are caves with wonderful things like icicles hanging from the roof, and other things made of the same stuff rising from the floor. Those shown here are in a cave in England. They have been made by water trickling through the rocks. As it trickled through, the water dissolved the rock, and on reaching the air again the "rock" in the water became separated and formed the curious things we see.

of the earth's crust that we know are called igneous rocks. This word quite well contrasts them with those parts of the earth's crust which have been formed under the influence of water. The Latin word for water is *aqua*, and so we call these parts of the earth's crust aqueous.

The action of water, then, is one of the great forces that have made and are still making the surface of the earth. In our own days it is by far the most important. In the first place, remember what happens to a lump of sugar if you put it into a glass of water. The sugar is melted, or dissolved, and this happens all the more quickly if you stir the water.

Now, water is always moving, and what with its power of dissolving things, and what with the help this power gets from the movement of the water, you may guess that every river, for instance, helps to change the surface of the earth. Then, also, of course, water can carry solid things along with it as it moves, even without dissolving them, and then perhaps, when the water comes to some place where it moves more slowly, this solid stuff that has been whirled along may drop and become heaped up at the bottom.

MOVING WATER IS ALWAYS REMAKING THE SURFACE OF THE EARTH

That is another way in which water has changed and is changing the surface of the earth. Indeed, we cannot do better now than to describe the way in which water moves about on the earth. It has been doing this ever since the time when the earth first became cool enough to have liquid water upon it at all; and in the course of this ceaseless round that water runs it has been endlessly making and remaking the face of the earth. Let us begin with the water of the sea. This, as you know, is very salt water, which simply means that it has a lot of salt-tasting solid stuff melted in it.

Perhaps you will want to know where that comes from. Now, let me see—in a minute—whether I can tell you. The sun has the power of sucking up into the air a great deal of water from the sea. What it sucks up, however, is only the water and not the salt stuff which has been melted in it. If you pour a little water into a saucer and leave it exposed you will find that after a time it has all gone, and if you put it in full sunlight it will go very much more quickly. Now, if it is sea-water that you have put into the saucer, you will find that the salt is left behind, and makes a little crust which the sun cannot draw into the air.

HOW THE CLOUDS ARE DRAWN UP OUT OF THE SEA

Well, the water is drawn up into the air by the sun in this fashion, and there, if there is a great deal of it, perhaps it will form clouds. Since the air is always more or less in motion, these clouds will be moved by the wind in one direction or another, and very often, of course, they will be moved so as to lie over the dry land. Enormous quantities of water from the Atlantic Ocean are thus carried eastwards in the air until they reach Ireland and the west coasts of Great Britain and Norway. Now, those are very rainy places, you may know; and the reason is that when the water in the air has been carried so far, it is very often cooled, so that it forms drops which the air cannot hold up. These drops then fall, and, of course, we call them rain. Now, rain-water is fresh water, and yet it was once sea-water, you understand.

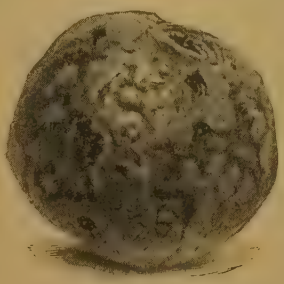
When the rain-water falls upon the earth, it does so, you know, for the same reason as the ball that falls from your hand; but even when it has reached the ground it must still go on obeying the law of gravitation. It must run to as low a level upon the earth as it can. It is simply because of the law of gravitation that water always tries to "find its own level," as we say. So the rain makes little streams, and these join and make rivers which run into the sea. "Even the weariest river," says a poet, "winds somewhere safe to sea."

THE REASON WHY THE SEA IS NEVER QUITE FULL

Long ago this was noticed by the writer of the Book of Ecclesiastes. He said: "All the rivers run into the sea, yet the sea is not full; unto the place from whence the rivers come, thither they return again." He was quite right. The reason why the sea is never filled, though all the rivers run into it, is that the sun is constantly drawing

water out of the sea, so that there is a continual circulation, or going round and round, of the water of the earth.

We said that we should soon find out where the salt of the sea comes from. The answer is that it comes from the rivers. As the water flows over the land to the sea it carries down with it a great deal of solid matter which it is apt to drop at one place or another where the current becomes slower. Much more important, however, is the fact that as it goes it also dissolves, or melts, all the kinds of solid matter that can be dissolved or melted that it finds on its way. If this goes on for some time the river will be able to eat a great gorge in the land, and these gorges may be seen in all parts of the world.



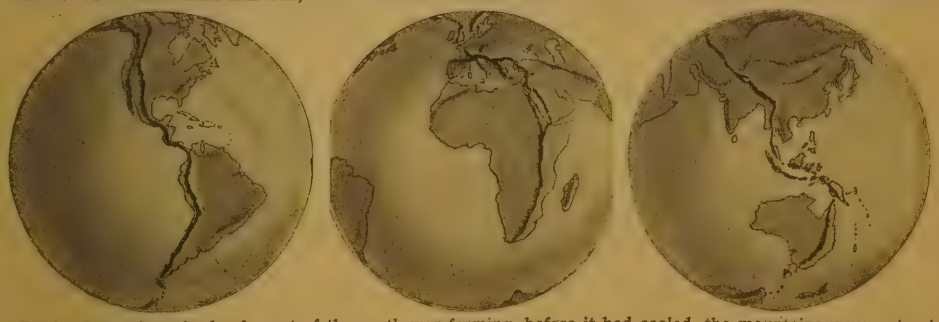
This shows a shrunken apple. The earth shrank in the same way when it was cooling down, forming the great hills and valleys and ocean depths.

But now you will see that though there is a going round and round of the water, there is no going round and round, or circulation, of the salts that the water dissolves, nor of the solid matter which it carries down with it. These are not sucked up again by the sun. The consequence is that from age to age all the rivers on the earth are washing part of the land into the sea, and, indeed, the sea is yearly becoming more and more salt. When the seas were first made by the falling of the water from the sky into the deeper parts of the earth, they must have been quite fresh, and ever since then they have been becoming more and more salt.

Men who study these subjects have used the saltness of the sea as a means of helping them to find out how old the earth is. They can measure the amount of salt which rivers carry down to the sea, and they can make a pretty good guess of the amount of salt that is in the sea; and so from these pieces of information they can find out for how many years, probably, the rivers have been flowing. It is interesting that the guesses as to the age of the earth's crust which have been made by this means do not differ very greatly from the guesses which have been made in quite other ways.

Water is also to be reckoned with as the maker of a very large number of the rocks and other kinds of stuff which we find on the crust of the earth. Many of these have been made merely by the movement of the water. You readily understand, for instance, that the sea and the tides make sand, and, of course, if this sand be pressed together and held together, we shall have sandstone. You know what shingle is, too; and shingle, like sand, has been made, and is constantly being made, by the action of water. Ordinary clay and gravel, too, have been made in this way. Then there are a great many kinds of rock—such as the chalk cliffs at Dover, England—that are really made from the remains of living creatures that existed long ago. Chalk cliffs consist of the chalky

THREE VIEWS OF THE EARTH, SHOWING HOW THE GREAT MOUNTAIN RANGES WERE FORMED



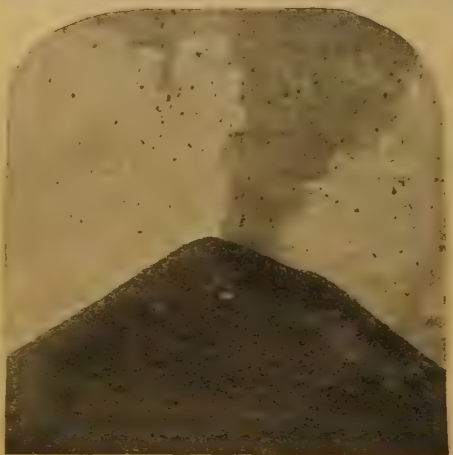
In the days when the hard crust of the earth was forming, before it had cooled, the mountains were not yet made. These came when the earth began to shrink, like the apple shown above, crumpling up and forcing up parts very high, as shown by these black lines, which mark the world's great mountain chains.

WHAT THE FACE OF THE EARTH IS LIKE

The earth is not a smooth place. It is made up of hills and valleys and mountains, and of deep places so big that a mountain could be lost in them. There are mountains covering hundreds of miles; there are great deserts of sand where no people live; and parts of the world are all ice and snow, where nothing grows.

This is a stream, or a small river, flowing in a valley between hills covered with a forest of trees.

This is a valley, the level land lying among hills. People living in valleys are protected from the wind.



This is a volcano, a mountain with a hole in it, out of which fire comes from very deep down.

This is a precipice, the sharp side of a rock, very high and steep, made like this by the wind and rain.

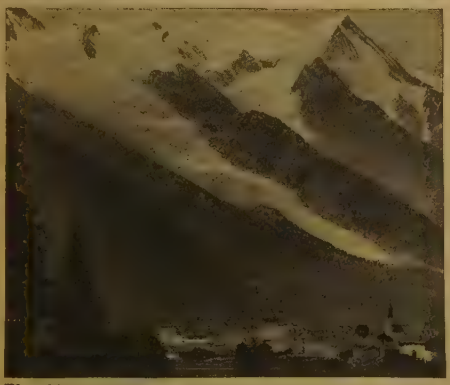
This is a desert, a great stretch of sand for hundreds of miles, across which camels carry their burdens.

This is a forest, a place covered with trees. Many forests are so big that men can travel in them for weeks.

The two middle pictures copyright by B. L. Singley.

HOW THE WATERS CREEP OVER THE EARTH

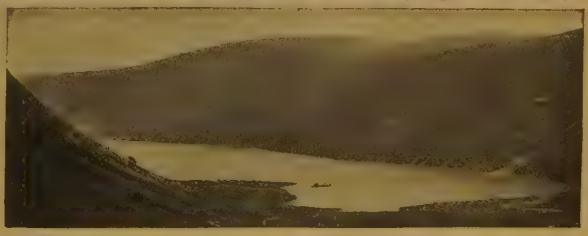
Nearly three-quarters of the earth is water. If you take a ball and cover three-quarters of it in a basin of water, the dry part will represent the dry land of the earth. Water covers all the rest. The water and land are changing places, but so slowly that we can hardly tell they are changing at all.



The Alps, great mountains covered with snow, are so high that a man has far to climb to reach the top.

Rivers of ice, called glaciers, moving only a few inches a year, are made by snow slipping down the Alps.

Some of the rain falling on the hills finds its way back to the sea, and on high land we often find water falls.



This is a lake, like a basin of water among the hills. There are lakes so big that a ship in the middle cannot be seen from the banks.

This is a river, a long channel of water on its way to the sea. All rivers run into the sea, and some run for thousands of miles.

The sea goes on moving for ever. The rain that comes from the sky is water that rises up from the sea, and when it falls as rain it trickles into the rivers and is carried back to the sea again. Thousands of ships are always on the sea, which has more life in it than the earth, and is thousands of miles across.

The photographs in these pages were taken by Frith & Co., Photochrome Co., Keystone View Co., Valentine, and Underwood & Underwood.

part of the bodies of millions of these tiny creatures all pressed together.

Water has played a great part in making rocks of this kind. Besides these and a host of others, there are the kinds of rocks which water has made in other ways—neither by the action of its movement nor by acting upon the remains of living creatures. In many parts of the world there are caves which have wonderful things rather like icicles hanging from the roof, and also other things made of the same kind of stuff, rising up from the floor to meet them. These have very long names, which do not matter to us just now. They also, like many others, have been made by water in a rather different way. The water has first of all melted, or dissolved, the stuff of which these things are made, and then, when the water has been gradually exposed drop by drop, to the air, a change has taken place in the stuff inside it, so that the water has no longer been able to keep it dissolved.

THE MAKING OF THE WONDERFUL STONE ICICLES IN THE CAVES

So it is easy to understand how one of these long-pointed things that hang from the roof of a cave has been made. Perhaps there has been a little crack in the roof of the cave, and some water has oozed through drop by drop. Each drop as it fell left behind it a little speck of solid matter, and this has been added to by those that came after it. The same thing has happened at the spot where the drops fell upon the floor, and very often the thing growing from the roof has met the thing growing from the floor, and so they have formed a pillar, very thick at the top and the bottom, and very thin in the middle, but gradually becoming thicker and thicker year after year as water, containing the stuff from which the pillar has been made, trickles down its sides.

You would perhaps like to know of something that has been made by the action of fire, and I will name to you two kinds of rock very different indeed from chalk or shingle. One of these is granite—a beautiful igneous rock, which is really made up of tiny crystals, like the crystals of which sugar and snow are made. Another kind of igneous rock is different from granite because it is not made of crystals, and I mention it because perhaps you use it in order to take ink-stains off your fingers. It is called pumice-stone. The next time that you use a piece of this try to remember that it was made by the action of tremendous heat, first melting the rock and then blowing it full of holes by the steam and gas formed within it.

THE TWO GREATEST FACTS THAT WE KNOW ABOUT THE EARTH

Now, this earth of ours is so very important that we must learn the main facts about it. The main facts, indeed, we have already learnt, though they were utterly unknown to the wisest men of not so many ages ago. It is a more or less round ball, with a cold crust and a hot interior, and it moves round the sun. Those, of course, are the two greatest facts about the earth, though anyone who had said such things 2,000 years ago would have been thought quite mad, and only 300 years ago one of the greatest men that ever lived was put in prison for saying so, and many others were followed on the street by jeering crowds, who sometimes threw stones and filth at them.

First, then, as to the shape of the earth. It is not perfectly round, but a little bit flattened at the North Pole and the South Pole, whilst it bulges a little bit all round its middle. The line that divides the earth equally into a north half and a south half is called the Equator. One of the ways of eating an orange, you know, is to cut it through its equator, and most oranges are shaped rather like the earth—only they exaggerate the bulging at the equator and the flattening at the Poles.

HOW THE EARTH'S SPINNING MAKES IT BULGE IN THE MIDDLE

We know why the earth bulges at the Equator—it is because it is spinning, and as it spins, the stuff of which it is made tends rather to fly outwards, just like the drops on a spinning umbrella. That is why the earth bulges at the Equator. But really it bulges only very little, for if you went through the earth from side to side, starting at some point on the Equator and coming out at the point opposite it, you would have to go only about twenty-seven miles further than if you went through the earth from the North Pole to the

South Pole. The distance you would have to travel would be rather less than 8,000 miles; and that is what is called the diameter of the earth. Diameter is rather a long word, but all that it means is *measure across*.

If you went round the earth instead of through it, you would have to travel nearly 25,000 miles, and that is called its circumference. Now, the earth twists right around in a day of twenty-four hours, and so it follows that anyone standing on the Equator is moving at the rate of about 1,000 miles an hour. If the earth went round very much more quickly than it does—if, for instance, it twisted right round in one hour instead of in twenty-four—anyone standing at the Equator would be thrown off instantly like the drop of water from the twisted umbrella.

If you have a globe you must have noticed that it is not set squarely in its frame. The North Pole is not at the very top and the South Pole at the bottom, but the globe is rather tilted. The picture on this page shows you what I mean. This tilting of the earth as it goes round the sun is very important indeed, for it is responsible for the seasons. It means that the northern half of the earth will get the sun's rays pouring very directly down upon it during one part of the year, which we call summer, but not so directly during the other part of the year, the winter.

That is why summer is hot and winter cold. In a little while we shall be talking about the way in which the earth goes round the sun, and we shall find that at some times it is nearer to the sun than it is at other times. You might think that when the earth was nearer the sun this would make summer; but, as a matter of fact, the earth is nearer to the sun during our winter. Our winter, also, is the summer for the Australians, and when we have summer they have winter. So the distance of the earth from the sun has nothing to do with the seasons, and they are due, as we have said, entirely to the fact that the earth is tilted.

Now, there is another very interesting fact about the tilting of the earth. It is that the earth is not always tilted to just the same amount, but for thousands of years it becomes rather more tilted than it was, and then for thousands of years rather less tilted. The earth wobbles rather as it spins, just as a top will wobble if it is prevented from spinning upright, and for the same reason. This wobbling of the earth is a very slow affair. Indeed, one wobble takes about 20,000 years. Now, if we remember that the seasons are due to the tilting of the earth, we may understand how it is that at one part of the wobble the earth may be so much tilted that the winter, for instance, in its northern half will be very long and cold. It is by means of studying this wobbling of the earth that we are helped to explain the times in her past when, as we know, all the northern part of the earth was covered with ice.

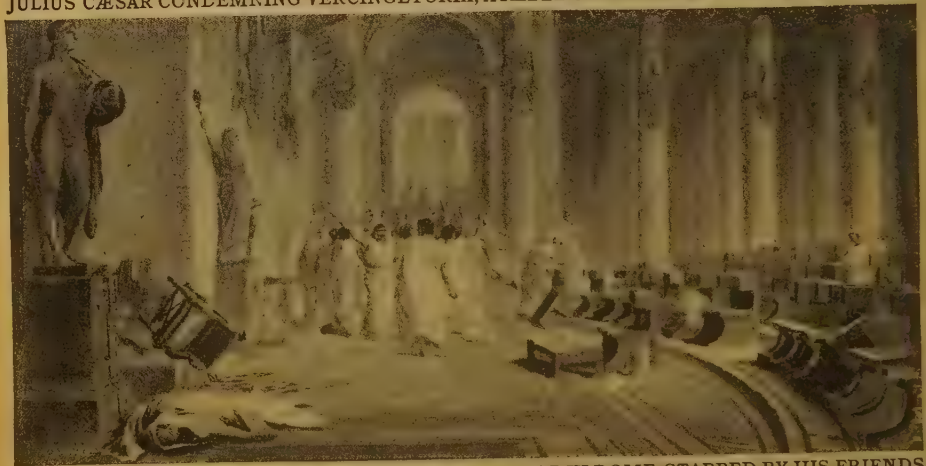
The earth is not a perfect ball, nor is it quite straight as it spins through space. It is flattened at the top, called the North Pole, and at the bottom, called the South Pole. It bulges out a little all round the middle, at what we call the Equator. Instead of spinning straight the earth is slightly tilted, and this tilting makes the difference between summer and winter.

Next we must go on to the way in which the earth moves round the sun. It moves not in a circle, but in a sort of flattened circle. This is why it is sometimes nearer the sun and sometimes farther away. It does not move at the same speed always, but moves most quickly when it is near the sun. If the earth moved no quicker when it is nearer the sun than when it is farther away, it would be drawn into him; and if it moved as quickly when it is farther away as it does when it is near, it would fly away from him altogether.

THE NEXT STORY OF THE EARTH IS ON PAGE 565.

JULIUS CÆSAR, THE FOREMOST MAN OF ROME

JULIUS CÆSAR CONDEMNING VERCINGETORIX, A REBEL CHIEFTAIN IN GAUL, NOW FRANCE



THE DEATH OF JULIUS CÆSAR IN THE SENATE-HOUSE IN ROME, STABBED BY HIS FRIENDS

Julius Cæsar became the foremost man in all the world. He set himself to rule the Roman Empire and to make wise laws. But there were some who thought he wanted to be king, a thing hateful to all Romans, and for this ambition that Cæsar was supposed to have, although he thrice refused the crown, they killed him at the foot of the statue of Pompey, his dead rival. But Cæsar's power was well founded, and his adopted son, Octavius, became the first of a long line of emperors.

THAT TRAVEL THROUGH SPACE FOR EVER

we can conceive, a thousand times faster than an express train. We to help us to imagine them on their ceaseless flight round the sun.

THE MEN OF THE ETERNAL CITY

IN ancient times, hundreds of years before the first Christmas Day, there was already standing on the banks of the River Tiber, in Italy, the city of Rome. And, as time passed, this "city of the seven hills" became the mistress of almost the whole of the world that was known to her people. After a time Rome's lordship was taken away, and new empires arose; but Rome herself, when the influence of Christianity came into the world, won a new dominion over the minds of men, the head of the Christian Church in Rome being looked upon as the head of the Christian Church everywhere. And though once more that dominion, too, was shaken off by the countries which became Protestant, there are still great numbers of Christians in all nations who look upon the Pope of Rome as their spiritual head; and still Rome stands upon the banks of the Tiber, so that men call her "The Eternal City." We read here of some of the great men who built up her power.

THE FIRST GREAT MEN OF ROME

CONTINUED FROM PAGE 368

THE Romans said that their city was founded by a king named Romulus, and that after him there reigned six more kings. Five of those six helped to make Rome great, either because they were skilful warriors, or because they made wise laws. But the seventh king was called Tarquin the Proud, because in all things he sought his own wealth and pleasure, trampling upon the people, instead of making it his aim to secure their welfare like the wise kings before him. And his sons were like him.

There was a young man among the nobles whose name was Lucius Junius; and he was also called Brutus, which means "blockhead." But, in truth, he was keen-witted, and only made a pretence of dulness. For he saw that Tarquin the Proud feared clever men, and sought to destroy them, lest they should become powerful and overthrow him. Yet, though Tarquin did not know it, there was no one in Rome whom he had more cause to fear than this Brutus.

There is a story that the king once sent two of his sons, and Brutus with them, to consult the Oracle of the temple at Delphi, which men believed could foretell the future. And when they had asked the questions as the king had told them, then the sons of Tarquin asked the Oracle: "Which of us shall rule in Rome hereafter?" And the Oracle answered: "He that shall first kiss his mother." As they left the temple, the stupid Brutus tripped and fell; but he had done this on purpose, so that he might kiss the earth, which is the mother of all men. The rule of Tarquin grew worse and worse; and nobles and people groaned under his tyranny, till their anger was ready to break out in fierce flame. And then a son of Tarquin, named Sextus, did wrong to Lucretia, the wife of one of the nobles—wrong so deep and bitter that after she had told her story to her husband, in the presence of her father and another noble, named Publius Valerius, she slew herself with a dagger.

Thereupon Brutus dropped his pretence of stupidity; he snatched the dagger from her heart, and called on all present to pledge themselves to rid Rome of the tyrant Tarquin and his evil sons. Then they went out and told the people in Rome what had befallen; for Tarquin was away at the head of an army. Brutus made haste

to the camp, and there he called upon the soldiers to rise up against Tarquin. And Tarquin and his sons had to fly to another city, nor could they ever win back their power in Rome. But the Romans made oath that they would never again have a king in Rome, and instead of a king they set two consuls at the head of the state. One of them was Brutus.

BRUTUS, WHO DROVE THE TYRANT FROM ROME AND CONDEMNED HIS OWN SONS

So the name of Brutus was ever held in high honor in Rome, as the man who had driven the tyrant forth from her gates and made her a free Commonwealth. Moreover, it is told of Brutus that he set to all men an example of stern justice, even when it must have almost broken his own heart. For it befell that his own sons were drawn into a plot to restore the Tarquins; and when Brutus learnt the truth he did not use his power to spare his own flesh and blood, but spoke the doom of the traitors with his own lips. Reckoning his duty to his country more highly than his love for his family, he condemned his sons to death.

For many a long year the Romans had constant wars with one or another of the neighboring cities, and many troubles within between the nobles, who were called Patricians, and the commons, who were called Plebeians. For the nobles held the rule and were often oppressors. And slowly the commons gained more and more share in the government. A time came when the power of Rome was in danger from the victory of the city of Veii. The Romans sent out armies and besieged Veii, but could not take it until they placed their forces under the command of a noble named Marcus Furius Camillus.

CAMILLUS, WHO WON GREAT FIGHTS AND BADE THE CHILDREN FLOG A TRAITOR

Now, Camillus found that he could make a hidden passage underground, called a mine; and, unknown to the people of Veii, he made a mine under the wall of Veii, and dug it so that his soldiers could burst their way out into the temple of Juno. Then he ordered a great attack to be made on the walls, so that all the people of Veii gathered to defend them. Then, when the whole of the city was defending the walls, Camillus himself led a troop into the mine, and they broke out and opened the gates of the city, so that its people were utterly conquered.

It is told of Camillus that in one of the wars, when he was besieging another town, he won honor for the Romans by a generous action. For there was a schoolmaster who thought to win favor with the Romans, and by a trick managed to take the school children out of the town and bring them to the Roman camp, so that the people of the town would agree to anything to get the children back. But Camillus bound the traitor's hands, and bade the children flog him back to the city. Some say that afterwards, when the Gauls sacked Rome, Camillus, who was in exile, returned and defeated them. Some say that his last public act was to persuade the leaders of the nobles and commons to agree together and be at peace. But, at any rate, his memory was honored as of one who, all his life, did good service to his country.

REGULUS, WHO GAVE UP HIS LIFE FOR THE SAKE OF ROME

The next famous man of whom we have to tell won no great victories for Rome. For he was in command of the Roman army when it was warring against the city of Carthage, in Africa; and the men of Carthage defeated the Romans and took many prisoners. Among the prisoners was the general, Regulus. The victors held Regulus captive; but when some Carthaginian nobles were captured in another battle with the Romans they sent messengers to Rome, and Regulus with them, offering to set Regulus and other prisoners free if their own men were set free. But Regulus, instead of begging the Romans to agree, so that he might come home again, told them that it would be wiser to refuse, since they had less need of him than the Carthaginians had of their men. So it was that Regulus returned to captivity in Carthage, rather than let Rome suffer even a little for his sake. And for this he deserved the higher honor, because he knew that the Carthaginians would be wrath with him, and put him to a painful death.

In that war the Romans defeated the Carthaginians in the end, but the power of Carthage was not destroyed; and some of her people went to Spain and there made a new power, drawing the

BRUTUS CONDEMNING HIS SONS TO DEATH

THE TRAITOR SONS OF BRUTUS APPEALING TO THEIR FATHER FOR FORGIVENESS

THE GRIEF IN THE HOME OF BRUTUS WHEN THE BODIES WERE BROUGHT IN

In the early days of Rome, when Tarquin the Proud was king, the king and his sons were so cruel that the people groaned under them, and a young nobleman named Brutus called upon the people to drive the Tarquins out of Rome. They were driven out, and afterwards some false Romans plotted to bring them back. Among the traitors were Brutus's own sons; then Brutus set to all men an example of stern justice. He condemned the traitors to death, though they were his own sons.

peoples of Spain under their rule or into company with them. They built a city which they called New Carthage, and they did this because they thought that, possessing Spain, they would again be able to make war successfully against the Romans.

SCIPIO, THE YOUNG HERO WHO WON SPAIN AND AFRICA FOR ROME

It was in one of those battles with Carthage that Cornelius Scipio first fought, being then but a boy. They say that Scipio saved his own father's life. After that his father was sent to Spain, to fight the Carthaginians who were there, and was killed. Then none of the Roman generals were willing to go to Spain, knowing how hard a task was before them; but Scipio, though yet very young, offered to undertake it. For he felt sure in his heart that he could conquer Spain for Rome.

Moreover, the people were so moved by his noble bearing and his persuasive speech, and by the courage he had shown, that they gave him the command. When Scipio was come to Spain the soldiers took heart; for they had loved his father, and now they followed the son with fearless devotion.

First of all, they captured the enemy's city of New Carthage, and then defeated them in other battles, until their power in Spain was broken altogether. Then he returned to Rome, and persuaded the Romans to send him with an army across the sea against Carthage itself.

The power of Carthage was laid low, and Scipio was called Africanus, because he conquered the land of Africa. At last there came a time when he saw that some men envied him, and others distrusted him for the tales that were told of him by his enemies, and then he ceased to take part in public affairs, scorning to defend himself against charges of baseness. So Scipio passed the end of his days as a private citizen.

CATO THE CENSOR, WHO WAS FAMOUS FOR THE ROMAN VIRTUES

Among these enemies of his was Marcus Porcius Cato, called the Censor. Cato was a man who was famous for what men call the old Roman virtues, for he proved himself a warrior reckless of his own danger, yet shrewd and wary, and one who held with firm doggedness to every purpose he set before himself and to every rule of life he laid down. Moreover, he scorned all manner of easy living, and would have had all men to live as carefully as himself. But Cato was hard and harsh, not fearing pain himself, and careless whether others suffered, regarding only the things that he considered useful, and despising the things that make life lovely and gracious as well as the things that are merely pleasant and the things that are harmful. And so, because Scipio was not of a like ungracious temper, Cato was very ready to think ill of him.

Cato's name of Censor was given to him because at Rome, Censor was the title of a great officer of State who was guardian of public morals; and when Cato was himself appointed to this office he was very rigid in punishing whatever he thought foolish or unseemly, fearing the great and powerful no more than the humble and mean, so that his rule as Censor remained in men's memory.

THE GRACCHI, WHO STROVE FOR THE PEOPLE AGAINST THE NOBLES

The daughter of Scipio, who was called Cornelia, was wedded to a certain Tiberius Sempronius Gracchus; and they had two sons, named Tiberius and Gaius, whose mother did not care to make a show of jewels, although she was wealthy, but would point to her two boys and say: "These are my jewels."

Now, after the Romans had overthrown Carthage, their armies vanquished many foreign foes, and the power of Rome became very great. But in Rome and in Italy the people suffered grievously. For since the old nobility had ceased to have all the power, a new order of nobles had sprung up out of those families whose members had held high office, and these new nobles tried, like the old patricians, to keep the power all in their own hands.

These senatorial families had managed to get possession of the new lands that Rome had won, so that everywhere were great estates tilled by the slaves of these nobles, and the old free yeomen farmers of Italy seemed likely to disappear altogether. But when Tiberius Gracchus was grown up he tried to make things better for the common folk, and to make the landowners give up to them the lands to which he said they really had

no right. Still, though he wished that they should be fairly paid for what they lost, the nobles were very angry, and said that Tiberius was going about to win the favor of the commons and to make himself king.

The nobles and their followers then fell upon the followers of Tiberius, and Tiberius himself was struck down and murdered in the fray. But Gaius, the younger brother, waited his time, and after some years he, in turn, came forward as the people's champion, seeking also to give power to other Italians by making them citizens of Rome. But most of all Gaius desired to humble the nobles who had done his brother to death, and by his eloquence and boldness he came near to gaining his end. Yet, when they saw that the nobles were better prepared to fight, his supporters were afraid, and again the nobles and their followers fell upon them and slew many. And when Gaius saw how fickle the people were, and that they were willing, as he said, to remain slaves, he bade his faithful servant to thrust his sword into his heart, and so the servant slew him, and then, for the love of his dead master, slew himself by his side. But in after time the people honored the memory of these brothers, whom we know now as the Gracchi, and set up a statue of their mother, Cornelia, writing thereon not that she was the daughter of the great Scipio, but that she was "the mother of the Gracchi."

Now you can see how the Roman state became divided between a Senate party and a popular party; and while the foreign wars went on, it came about that whenever a successful general won the favor of his soldiers he could use his army to give his own party power. Thus the popular party triumphed under Gaius Marius, and again the Senate's party seemed to have crushed them under the merciless leader Sulla. The blood of both parties was spilt like water, and instead of seeking the common weal, it seemed that every man cared only for his own gain, or, at best, for the gain of his party, so that some began to see that there would be no settled order in Rome, but endless strife, until there should arise some one man strong enough and wise enough to crush all quarreling parties, and to take the government into his own hands and rule with the good of the whole state as his aim.

REGULUS GOING BACK TO CARTHAGE TO DIE A CAPTIVE FOR THE SAKE OF ROME

Among the Senate party, their great captain Sulla saw signs of great talent in a very young man whom we call Pompey. Therefore, Sulla raised him to high command, while other people sneered at him as a boy. But the boy led armies with great success, and when he returned from Africa, where he over-

threw Sulla's enemies, Sulla hailed him by the title "Magnus," which means "great." But, after all, he did not prove to be really a very great man, though for a long time it seemed that he might possibly become the saviour of the Roman state. For he was a skilful soldier, and, besides that, he was kind-hearted, and had a way that made him popular.

Then, while he was still a young man, he broke away from the Senate party, and became the chief of the people's party, and almost the chief man in the state. Soon after this he was appointed to destroy the bands of pirates who sailed over the Mediterranean Sea, and then he went to take command of the Roman armies in Asia, where there was a war going on against a barbarian monarch.

It was some years before Pompey finished that war successfully, and during the war there was in the city another man who was laying his own plans to become master of the Romans. This was the most famous of all Romans, Julius Cæsar.

CÆSAR AND POMPEY, THE FOREMOST MEN IN ROME

Cæsar had always belonged to the popular party, though he himself belonged to a noble family. He saw that if he wished to win power he must make himself a favorite with the people; and he saw, too, that the next thing would be to make Pompey feel that if they two joined together they could rule the Roman world; although there was a third, Crassus, who, because of his vast wealth, was a sort of rival to Pompey. When Pompey came back from the war with Mithridates, Cæsar managed so that the three agreed to act together; and no doubt Pompey thought he was himself going to be the chief of the three, seeing that Cæsar was as yet without practice in the wars, though famous as an orator. Yet it was Cæsar who devised measures that pleased the people.

Now, Cæsar knew very well that the time would come when there would be open strife, whether he or Pompey should be the head of the state, and he got himself appointed to be governor of the province of Gaul, which means France. But as there were many war-like tribes in Gaul he required an army to bring them into subjection, and with this army he very soon showed that he was one of the most skilful soldiers who ever lived, with a wonderful power over his followers. Cæsar wrote a book of his wars in Gaul, which is a model of what such a book ought to be. While he was there he crossed the British Channel and fought the Ancient Britons; but he only wished to see what the country was like, not to conquer it, so he went back to Gaul.

HOW THE STRIFE GREW UP BETWEEN CÆSAR AND POMPEY

But Pompey stayed at Rome, and made friends again with the Senate party. The news of Cæsar's victories in Gaul made him afraid that his rival would come back to Rome with his army and seize the chief power in the state; and Pompey thought that by staying at Rome he could best make sure of being strong enough to check Cæsar. And when Cæsar saw that the time had come when he must either march to Rome at the head of an army or be thrust from power altogether, he led his troops across the River Rubicon, which was the boundary of his province. But since no governor might lead armies except in his own province, this was as much as to declare war upon the Roman Government. So now, when people do something which binds them to go on, and makes any turning back impossible, they are said to have "crossed the Rubicon."

THE FLIGHT OF POMPEY AND HIS SAD DEATH, AND CÆSAR'S GREAT GRIEF

Then Pompey found that his own war-like prowess was forgotten, whereas the deeds of Cæsar were fresh in men's minds; and the soldiers everywhere declared in Cæsar's favor, so that Pompey had to fly from Italy. But afterwards he gathered a great army in Greece, and to Greece at last came Cæsar to fight him. At the battle of Pharsalia, Pompey was overthrown and forced to fly from there to Egypt; but as he was landing a murderer stabbed him in the back, and the head was hewn from his dead body. But when Cæsar also came thither, and Pompey's head was brought to him, he shed tears, and put the murderer to death. For this was notable in Cæsar, that he was, like Scipio,

CICERO DELIVERING ONE OF HIS GREAT ORATIONS IN THE ROMAN SENATE

CICERO ABOUT TO DIE AT THE HANDS OF MARK ANTONY'S TROOPS

Cicero was the great orator of Rome in the days of Pompey and Julius Cæsar, and his speeches are looked upon even now as models for orators. The top picture shows Cicero denouncing the treachery of a senator, whom we see sitting, listening anxiously, at the end of the seat on the right. After the murder of Julius Cæsar, however, Cicero took the side of his murderers, which made Mark Antony so angry that he had him put to death. Cicero fled from Rome, but Antony's friends caught him and put him to death.

of a merciful mind, ready to take into favor those who had fought against him.

What Cæsar did, and why they plotted to take his life

And having thus come to be the foremost man in all the world, Cæsar set himself to put the ruling of the great domains of Rome in order, and to make wise laws. But there were some who thought he would like to be crowned king, a thing hateful to all Romans; and some who wanted to get the power back into the hands of the Senate; and others who had private grudges against Cæsar, counting among their number not a few of the most powerful men in the state.

So they plotted to take Cæsar's life, and one day, as he stood near the statue of his dead rival, Pompey, they came to him, pretending to make a petition, and thereupon drew their swords, stabbed him to death, and sent men through the city crying that Rome was freed from the tyrant. They forgot that, though Cæsar fell, either some other must take his place or the empire of Rome must be rent in pieces. For Cæsar had found and shown the only way to hold it together, and his adopted son, Octavius, was destined to become the first of the Roman emperors, Cæsar Augustus. But Octavius was only eighteen, and none thought he would take the place of Julius.

How Mark Antony stirred up the people

But one Marcus Antonius, whom we commonly call Antony, who was a clever man and a friend of the murdered Cæsar, got leave by fair words to speak to the people, whom he stirred up to a great fury against those who had slain him. And after that none knew for a long time who would get the upper hand. But the young Cæsar made common cause with Antony, and presently those who had slain Cæsar and those who would avenge him were at war. Antony and Octavius overthrew the other party, of whom the most famous now is Marcus Brutus, by reason of the play of Julius Cæsar which Shakespeare wrote. This Marcus Brutus was one of those who had taken the side of Pompey in the war with Cæsar, and yet had been treated with great favor by Cæsar afterwards. But he was so full of the belief that the rule of one man in Rome must be bad for the state—perhaps because he remembered that the first Brutus was called great because he drove out the Tarquins—that he joined the conspiracy against his own friend. And it is said that when Cæsar saw him with his sword drawn he did not care to defend himself, but only said: "And thou too, Brutus!" and so fell, pierced by his friend's sword.

There was another famous Roman of those days whose name is known to everyone, the orator Cicero. He, too, was among those who took Pompey's side, but was afterwards treated by Cæsar with favor. It is said that the reason why the conspirators did not ask him to join them was, that they thought he would expect them to pay too much regard to his opinion, although they did not really think him a wise man.

Cicero the orator, Antony the soldier, Octavius the emperor

However, after the murder, Cicero made many famous speeches on their side in opposition to Antony. Then Antony was so angry that Cicero was one of the people whom he specially named to be put to death; and when some of Antony's friends caught Cicero, they cut off his head and his hands and sent them to Antony. Besides being a great orator, so that his speeches are looked upon as models even now, Cicero wrote books which tell us more about those times than any other writings we have.

After the death of Cæsar it seemed at first that Octavius and Antony would divide the world between them; but later they also went to war, since both wished to rule. And though Antony was the elder, and a practised soldier, yet he was vanquished by Octavius; because he loved Cleopatra, the Queen of Egypt, and she loved him; and she persuaded him to remain in Egypt with her when he should have been making ready for his strife with Cæsar.

So, by land and sea, Antony was defeated, and when he saw that all hope of victory was gone he slew himself; and there was none left to stand between Octavius and the lordship of the Roman world. Over this wide extent of territory he ruled successfully for many years.

THE NEXT STORIES OF GREAT ROMANS BEGIN ON PAGE 535.

THE PLAYS OF SHAKESPEARE

WE have already read the stories of four of Shakespeare's plays, and four more are told here. But we must bear in mind that most of Shakespeare's comedies and tragedies were founded on stories which he did not invent. Some of the stories had been favorites on the Continent and in England long before the great poet made use of them for his plays. They might have been forgotten for ever if he had not retold them by means of the characters he created, and in his own wonderfully beautiful language. He wrote both tragedies and comedies, and he excelled all other dramatists the world has known by being equally great both in tragedy and comedy. A tragedy is a poetic play in which the characters suffer great sorrows, some of the chief persons die, and the end is sadness. A comedy is a play in which all ends happily. The first four plays we read have all been comedies. But we are now going to read the stories of three tragedies, "Othello," "Romeo and Juliet," and "Hamlet," and another comedy, "Twelfth Night."

OTHELLO, THE MOOR OF VENICE

CONTINUED FROM 332.

THE city of Venice, though now only one of the many beautiful towns of Italy, was formerly the scene of a great republican government that sent its ambassadors to the mighty nations of the world and ruled over many other towns as well as Venice itself; while its ships traded to far countries, and its soldiers and sailors won colonies in other lands. In these great days a Moor, or dark-skinned man from the North of Africa, named Othello, was a brilliant leader of the army of Venice. He was a man of noble mind, despite his dark skin, and so able that he was sent to be governor of the island of Cyprus, which then belonged to Venice.

Now, in addition to all his triumphs as a soldier, Othello had the fortune to win the love of one of the most beautiful women in Venice, whose name was Desdemona, the daughter of Brabantio, a senator, or member of the Government of Venice. It may seem strange that this Moor should be loved by a fair lady who had refused many richer suitors; but she thought more of his noble mind than of his looks, and all her delight was to listen to his thrilling tales of the battles in which he had fought, of his hairbreadth escapes, of strange adventures through which he had passed by land and sea.

But her father, Brabantio, did not know of the things she kept hidden in her heart, as she knew he would never approve of her wedding the Moor. His anger was terrible when one night he was awakened by two men, who told him that Desdemona had left him and was now married to Othello. One of these men was Iago, who long had served the Moor as one of his officers, but who now hated him bitterly, since Othello had chosen Cassio as his lieutenant when Iago thought he should have been preferred. Iago was cunning, spiteful, and capable of any villainy; while Cassio was frank and open, but easily led astray.

Brabantio appealed against Othello to the Duke of Venice and the senators, who at first were in his favor. But Othello answered the charge of stealing away Desdemona in so manly a way that the Duke and others were soon won to his side, especially as Desdemona herself proved that she loved the gallant Moor and was proud to be his wife.

That very night the devotion of Othello to the country he had served so well was put once more to the test, as he was ordered off to defend Cyprus, which was in danger of being attacked by the Turks.

The great soldier at once sets out for Cyprus, Desdemona being left in the care of "honest Iago," as Othello still thinks him faithful, and Iago's wife, Emilia, is asked to attend on Desdemona. Cassio follows in another vessel; Iago, with Desdemona, setting sail in a third. Cassio is the first to arrive, his vessel having lost Othello's in a storm, and Iago, who "has had most favorable and happy speed," reaches the island before the Moor. Iago's hatred of Cassio for having been preferred by Othello is speedily

Here we see the lovely Desdemona with her father, Brabantio, and her lover, the brave Moor. She thought more of Othello's noble mind than of his dark skin, and all her delight was to listen to his tales of the wars in which he had fought, of his hairbreadth escapes, his adventures by land and sea.

seen, and his crafty mind is at work to ruin the lieutenant, whom Desdemona treats with greater friendliness than she does the malicious Iago.

When Othello arrived, soon after Desdemona, he was not displeased to hear that the Turkish ships had all been shattered in the storm which had so nearly wrecked his own vessel, for now he was able to devote more time to his bride, "my fair warrior," as he lovingly called her. On the night of his arrival he bade Cassio keep order in the castle, and see there should be no disturbance among the soldiers. The crafty Iago, however, now began to work his plot, plying the luckless Cassio with wine until he became intoxicated, and in a drunken brawl wounded Montana, the governor of the island, whom Othello was to replace. Coming on the scene of the disgraceful brawl, Othello heard an account of it from Iago, who was the cause of all the trouble; and, thinking Iago was trying to shield Cassio by making light of the matter, he said, with sorrow, "Cassio, I love thee, but never more be officer of mine," appointing Iago to the charge of the guard. Thus, the first part of the villain's scheme of treachery had succeeded. But worse—far worse—was yet to come.

Poor Cassio now appealed to Desdemona that she might intercede with her husband on his behalf. This the gentle Desdemona did, but Iago's new villainy was to make Othello believe she pleaded for Cassio because she had fallen in love with him. So well did he instil the poison of doubt into Othello's mind that at length the Moor began to lose faith

in his wife, and, believing she had ceased to love him, became almost mad with jealousy. Chance favored the evil designs of Iago, as it so happened that before they were married Othello had given Desdemona a beautifully-worked handkerchief supposed to be of magic power, to make its owner loved and amiable; but to make her become hateful to her lover if ever she should lose it. Iago longed to get possession of this, and urged his wife to steal it.

One day, when Othello was in an ill mood of doubting, and complained of a pain in his head, Desdemona offered him the handkerchief; but he put it from him, saying, "Your napkin is too little," and it fell to the floor, where Emilia quickly picked it up and passed it to Iago. This fateful little handkerchief now became a tool of great mischief, as it was conveyed to Cassio's house by Iago, and poor Cassio, finding it presented it to a woman as a pretty thing, not knowing to whom it had belonged, and still less guessing that Othello had been brought by Iago to watch him with the handkerchief, as a proof that Cassio had received from Desdemona a gift she should have esteemed so precious.

Othello, now believing that his wife had ceased to love him, determined to kill her; but as she lay asleep in bed he bent over her and kissed her, she looked so beautiful. His kiss awakened her, and in answer to her frightened questions he bade her say her prayers, telling her he knew of her love for Cassio. In vain did poor Desdemona plead her innocence; her jealous husband covered her with the bed-clothes and smothered her.

She was not yet dead when Emilia got into the room and told of her husband Iago's evil doings, exclaiming that the misguided Moor had murdered a saint, whose last words were of love for Othello.

Iago, who has come in, stabs his wife for denouncing him, and then runs out; but others arrive, and Iago is brought back, Othello in his anger wounding him.

Realizing in an awful agony how beguiled he had been to trust so vile a man and mistrust so good a wife, Othello stabbed himself, and, falling upon the body of his innocent bride, exclaimed with his dying breath:

I kiss'd thee ere I kill'd thee:—no way but this,
Killing myself, to die upon a kiss.

TWELFTH NIGHT; OR, WHAT YOU WILL

FANCY Shakespeare at a loss for a title! It seems absurd that one whose mind was so full of fancies, so rich in thoughts, should ever have been at a loss for a title for a play he had written. Yet such was the case with the comedy which we know as "Twelfth Night; or, What You Will." It is said to have been christened "Twelfth Night" for no better reason than that it was first performed on January 6th, which was observed as a festival in Shakespeare's day, and long afterwards, being the twelfth day after Christmas.

Illyria was the name of a country on the Adriatic Sea, and, while sailing thither, the twin son and daughter of a gentleman of Messaline were wrecked. The youth's name was Sebastian, his sister was called Viola.

Both of them had the good fortune to escape from drowning during the shipwreck, but they did not reach the land together, and each was ignorant of the other's fate. Viola was saved by a sea captain, by whose help she contrived to dress up as a page, and made her way to the court of Orsino, Duke of Illyria. It was safer for her to assume this disguise than to travel as an unprotected girl in a strange land, and she looked such a handsome boy that she had no difficulty in being accepted as a page to the Duke.

Now, the Duke was in love with a young and rich lady of his land, the Countess Olivia, and wished to marry her. But Olivia had rejected his proposals, refused to see him, and even spoke of shutting herself up for seven years to mourn for a dead brother. The Duke thought that his handsome young page would be a good messenger to send to Olivia on his behalf, and so Viola was sent by Orsino to plead with the fair countess on behalf of her princely lover. But, greatly to Viola's embarrassment, instead of softening Olivia's heart towards the Duke, the messenger had spoken so sweetly that Olivia fell in love with the pretty page.

A new and unpleasant actor now came

upon the scene, in the person of a drunken old courtier named Sir Andrew Aguecheek, who had the audacity to consider himself a rival for the hand of Olivia. This Sir Andrew, noticing that the Countess was so favorably disposed to the engaging young attendant of the Duke, made bold to challenge Viola to a duel.

Viola's disguise had thus brought her into a strange adventure, and she had no idea what the issue would be. But three months had now passed since the shipwreck, and her brother, Sebastian, in company with his friend Antonio, who was so devoted to the young gentleman that he had even given him all his money, was on his way to the palace of Orsino. Antonio, having been at the time in arms against the Duke, was afraid to accompany Sebastian to the palace, and thus their ways had to separate, to their mutual sorrow.

Soon after leaving his friend, Antonio was surprized to come upon two persons about to engage in a duel, and thinking the younger of them to be none other than Sebastian, he promptly interfered on his behalf. The duelists, however, as we may guess, were Sir Andrew and Viola, the notorious old coward having forced the young page to draw her sword, much against her will, just at the moment of Antonio's timely arrival. The immediate result of Antonio's interference was not only to stop the fight, but to bring some of the followers of the Duke upon the scene, and they, recognizing him as a former enemy, put him under arrest. Hereupon he turned to Viola, and asked her—thinking her Sebastian—to give him back some of his money, knowing he might have need of that; but Viola showed her natural astonishment at this request, and protested that she had never seen him before, to his great indignation at her supposed attempt to cheat him.

While Viola's adventures are thus increasing, Sebastian, too, is having his share of misunderstanding, for Sir Andrew Aguecheek, baulked of his revenge on the timid page, comes upon Sebastian in front of Olivia's house, and mistaking him for Viola, draws his sword upon the youth; but the coward has soon excellent cause to regret having forced the youth to fight. The Countess, having witnessed what she supposes to be the manly conduct of the Duke's page in the encounter with Sir Andrew, is more than ever charmed with him, and, inviting Sebastian into her house, frankly declares her love for him, and her willingness to marry him.

Here is, indeed, the strangest of Sebastian's adventures; but as the lady is young and lovely, he accepts the situation gallantly, and, a priest being at hand, the wedding ceremony is not delayed. Olivia no longer dreams of seven years' mourning!

The next scene in this queer comedy of errors takes us to the audience-chamber of the Duke, whither Antonio has been brought by his captors before Orsino. There Antonio, seeing Viola with the Duke, and still mistaking her for her twin brother, chides her for the way in which she has repaid his constant friendship of the past three months.

The Duke, of course, was mystified completely by Antonio's words, as he had had his page for three months; but confusion became worse confounded when Olivia arrived, and, seeing Viola there, addressed her as "husband." The Duke was enraged that his attendant should, as he now thought, have betrayed his trust and made love to the lady, nor were matters improved when Viola denied Olivia's statement that they were married, and the priest, who performed the ceremony, was called to bear witness to it! Sir Andrew Aguecheek added a further touch to the confusion by appearing and stating that the Duke's page had but recently in a quarrel broken his head, and that of his boon companion, Sir Toby Belch, Olivia's uncle, for whom he sought the services of a surgeon.

When matters were thus at their worst, all was suddenly made clear by the appearance of Sebastian himself, who, after explanations, discovered that the Duke's page was none other than his own sister, whom he had never hoped to see again, believing her to be drowned. As Sebastian had so quickly become the husband of Olivia, who, while refusing to become the wife of the Duke, was nothing loth to be his "sister," Orsino chose the true romantic ending for this comedy by offering his hand and heart to Viola. Viola had already learned to love him and they were married immediately.

ROMEO AND JULIET

IN the ancient Italian town of Verona lived two noble families who were at deadly enmity with each other. One family was named Montague, and the other, Capulet. Romeo, the brave and handsome youth, heir of the Montagues, was in love with a lady called Rosaline; but she refused to have anything to do with him, which made him so sorrowful that he shunned all gaiety and lay sleepless at nights. It chanced one day, when Romeo was speaking in the street with his cousin Benvolio, that a servant came to him, asking if he could read a paper he carried, on which were the names of the guests to whom he was bearing invitations to a ball given by the great Capulet. Romeo noticed Rosaline was to be among the guests, whereon Benvolio suggested they should go to the ball masked, and when Romeo saw the many lovely ladies who would be there he might forget the disdainful Rosaline.

At a ball in Verona, Romeo, the heir of the Montagues, a family at feud with the Capulets, falls in love with Juliet, the only daughter of Capulet, not knowing who the lady is. Thus begins one of William Shakespeare's great tragedies, the story of which is retold on this page.

The lover thought it would be impossible ever to forget Rosaline; but when, in due time, he was mingling with the dancers in his foeman's house, he saw a lady who was so fair that she seemed to be "a snowy dove trooping with crows," and he determined that he would speak to her as soon as he could. While asking a servant the name of the fair one, Tybalt, a young Capulet, recognized Romeo's voice, and wanted to challenge him; but the lord of the house kept him back, saying that Romeo bore himself like a gentleman, and was said to be "a virtuous and well-governed youth."

Romeo had now come up to the fair lady, and, kissing her hand, had spoken a few words of admiration, and received the assurance that he was not displeasing to her. But when he knew that she was none other than Juliet, the only child of Capulet, he was very sad. For he had fallen in love with the daughter of his father's mortal enemy.

At midnight Romeo departed, but he felt that he could not go homeward and leave the place where Juliet was; so he climbed over the orchard wall into Capulet's garden, and while he was hidden by the darkness of the night he saw the lady appearing at the window. She called his name to the night air, saying:

O Romeo, Romeo! Wherefore art thou Romeo?
Deny thy father, and refuse thy name;
Or, if thou wilt not, be but sworn my love,
And I'll no longer be a Capulet.

When she had spoken more words in this strain, Romeo stepped forward and

told her that his name was now hateful to himself since it was that of her family's enemies. That night they vowed their love for each other, and purposed to be married at all risks.

In the early morning we next see Romeo at the cell of Friar Laurence, a priest, who thought the lover had come from his usual sleepless night weeping over Rosaline's hardness, and was surprised to hear of the new love, but rejoiced to think that now, perhaps, the feud between the Capulets and the Montagues would come to an end with the union of this couple. Willingly he consented to marry them secretly.

Before long Juliet herself arrived, and presently the priest had made her Romeo's bride.

Soon after this, Romeo's friend, Mercutio, a kinsman of the Prince of Verona, and a very quick-tempered man, engages in a quarrel with Tybalt, and Romeo appears on the scene. Tybalt immediately turns upon Romeo, who, having so lately wedded a Capulet, now feels kindly towards the family, and refuses the challenge. Thereupon Mercutio draws his sword on Tybalt, but the latter kills him.

Romeo could not let his friend's death pass unavenged, and scarcely had he slain Tybalt than the Prince arrived. He had long been vexed by these family feuds, and now his displeasure was so great that he banished Romeo.

Friar Laurence advized Romeo to flee to Mantua, and there to wait until he could make his marriage known, implore the Prince's pardon, and come back to Verona. Juliet's old nurse brought Romeo a ring from his young bride, and after a brief meeting with Juliet he hastened from Verona.

Juliet was plunged in sorrow, but her mother thought it was for the death of her cousin Tybalt; and when a young nobleman named Paris asked for her daughter's hand, Lady Capulet agreed that they should be married within a few days, and began to make active preparations for the wedding.

At first Juliet refused, and then she went to take counsel of the Friar, saying she would kill herself rather than be married to Paris. As a desperate plan of escape the Friar gave her a phial, from which she was to drink on the eve of the wedding her mother had arranged. It contained a drug which would make her fall into a trance with all the appearance of death, and she would then be taken to the family vault. Meanwhile Friar Laurence was to send for Romeo, and when Juliet had awakened from her long sleep her lover would be by her side ready to take her with him to Mantua.

The strange and dangerous scheme of the Friar was carried out so far that Romeo came to the tomb after Juliet had been placed in it; but he had come thinking she was really dead, and had provided himself with poison that he might die beside her. Paris, however, was there before him, having come to strew flowers on Juliet's coffin. The two men quarreled and fought at the grave, Paris being killed.

When Romeo had opened the vault, he laid the body of Paris beside that of Tybalt, and then he gazed on the beautiful face of his wife, kissed her for the last time, and drank the poison.

Romeo had been in the tomb for half an hour when Friar Laurence came to find Juliet, as it was now time she should recover. On entering the vault he saw Romeo lying near the blood-stained Paris, and called anxiously to Juliet to arise, for she was now beginning to show signs of life. She awoke, and he told her that if she would but come, he would put her "among a sisterhood of holy nuns." But, hearing the sound of approaching footsteps, he fled.

When the sight of her dead Romeo and the bleeding Paris met the awakened eyes of Juliet, she was overcome by sorrow and snatched up Romeo's dagger and stabbed herself.

The watchmen came in, and then they summoned the Montagues and Capulets, and the Friar was brought back. He explained to the astonished company the cause of the tragedy, and when the Prince reproached them with the death of the youthful lovers on account of the feud between the families, Montagues and Capulets alike were stricken with remorse.

Montague reared to "the true and faithful Juliet" a statue of pure gold, and the same honor was paid to Romeo by Capulet. Thus ended the rivalry and hatred of the two families.

HAMLET, PRINCE OF DENMARK

PRECISELY as the clock struck twelve at midnight, the ghost of the former King of Denmark used to appear on the walls of the Castle of Elsinore. Scared soldiers of the guard told Prince Hamlet of this, and he determined to speak to his father's spirit the next time it appeared. For this purpose he waited through the cold, dark night until the midnight hour, when the ghost was seen beckoning to him. His faithful officers would have detained him, but Hamlet broke away and followed the spirit.

Hamlet, we must know, had been so full of love for his father that his grief for the King's death two months before had increased daily, rather than lessened, and was now mingled with horrified anger at his own mother, Queen Gertrude, and his father's brother Claudius, who had married the Queen in less than two months after the death of the King.

The young Prince's mind was full of strange unrest at this disgraceful conduct, and he was suspicious as to the death of his beloved father. So that when the ghost revealed to him the fact that he had been poisoned by his brother, in order that the latter might wed his queen and sit upon his throne, all Hamlet's thoughts turned bitterly to means of vengeance. Encouraged by his father's spirit, he resolved never to rest until the usurper had paid for his crime; and, the better to carry out his plans, he feigned madness, speaking strangely even to Ophelia, a beautiful maiden whom he loved.

It chanced that a company of players came to the castle, and Hamlet, looking every way for means to convict the new King of his crime, suddenly conceived that by means of these play-actors he might bring home to his mother and stepfather his knowledge of their evil deeds.

With this end in view, Hamlet arranged that the company would perform next day a play that dealt with the murder of a Duke of Venice, and into this some new lines which Hamlet was to write would be introduced. We can guess that these new lines would refer to a King, poisoned by his brother so that the latter might enjoy his possessions and wed his widow; for Hamlet ex-

Hamlet, Prince of Denmark, had sworn to avenge the death of his father who had been killed by his own brother Claudius pouring poison in his ear as he slept. Claudius had then married the dead King's widow. Hamlet got some actors to perform at the Court a play which recalled the death of his father. Claudius and the Queen were greatly disturbed by the performance, Hamlet watching their behavior closely.

claimed, when he had made this arrangement with the players:

The play's the thing,
Wherein I'll catch the conscience of the King.

And so it all fell out. When the tragedy was performed before the King and Queen next day, the mimic deeds enacted on the stage were so like in every detail to the manner in which Hamlet's father had been done to death, by the pouring of a poisonous drug into his ear as he lay asleep, that the guilty Claudius and Queen Gertrude could stand it no longer, and left the room in great excitement and disorder.

The play had caught the conscience of the King!

In great agitation Claudius expressed to Queen Gertrude his wrath against Hamlet, and bade her reprimand her son for his strange conduct. She summoned Hamlet to her private apartment; but Ophelia's father, the aged Polonius, who was Lord Chamberlain of the kingdom, remained hidden behind a curtain, fearing lest some violence might result from the Prince's supposed madness. When the Queen reproved her son for having the play performed, he straightway told her that he would not let her go until he had "set up a glass where she might see the inmost part of herself." So wild were his words that the Queen, fearing he would kill her, called for help, and Polonius echoed the call. Hamlet, pretending that the disturbance was created by a rat behind the curtain, thrust in his sword and killed the old courtier. Then, with wild, strange words of scorn, he reproached his mother till she entreated him to speak no more.

But sad was the fate that befell the beautiful Ophelia. Believing her lover's affection to have turned to hatred, and hearing of her father's death at his hand, she could do naught but brood over her woes, until at length her mind gave way.

King Claudius, of course, had but one thought now—to be rid of Hamlet, whom he believed to possess his secret. The Prince was sent to England with a sealed letter from Claudius in which the King desired that Hamlet should be put to death on landing. But this was not to be. The ship bearing the Prince, was attacked by pirates, who took all on board prisoners, eventually restoring Hamlet to Denmark. Returning to Elsinore with his faithful friend Horatio, they entered a churchyard where a new grave was being dug, and there they stood watching the gravediggers, little dreaming for whom the grave was being made. Presently appeared a funeral procession. Hamlet and his friend withdrew, but from their hiding-place they saw the corpse of Ophelia borne in the midst. That unhappy girl had been drowned while gathering flowers by the side of a brook.

Tenderly the body was laid in the grave; but Laertes, Ophelia's brother, distraught at her death threw himself upon her body and begged that he might be buried with her. Hamlet then ran forward and leapt in beside the living and the dead. A fierce struggle ensued, Laertes accusing Hamlet of his sister's death since his conduct had turned her mind. But in the end they all withdrew, and poor Ophelia was left in her grave.

A duel, however, had to be fought between Hamlet and Laertes, and the whole Court assembled to watch the fateful combat. Claudius hoped it would rid him of Hamlet, and caused a cup of poisoned wine to be placed in readiness for the Prince, that he might drink it when exhausted, in case he overcame Laertes, for whose use a poisoned rapier had been provided. In the struggle Laertes and Hamlet unknowingly changed swords, but not before the Prince had received a wound from the poisoned point; and Laertes, in his turn, was next wounded with the same sword. Meanwhile, Queen Gertrude, drinking in honor of her son's clever swordsmanship, partook of the deadly wine, and died.

The death of his mother showed Hamlet the last villainy of the wicked Claudius, which had entirely miscarried and robbed him of his Queen. Laertes, dying, forgave the Prince, and seeing all clear at the last, he denounced the King as the cause of all their woe; while Hamlet, turning his steel on Claudius, made the murderer drink the deadly cup himself. Presently the poison carried by the sword into the wound which Hamlet had received took effect, and the chief actor in this strange, sad tragedy closed his eyes forever in death.

THE NEXT FAMOUS BOOKS BEGIN ON PAGE 493.

CONTINUED FROM PAGE 270.

WORD-BUILDING

Lessons in word-building should go hand in hand with the reading lessons. We shall gain the power through these exercises to make out new words for ourselves. In the lesson on page 452 is given the short sound of A and O combined with the letters M, N, T, and X. A few words made from these combinations are given here, but there are many more words that can be made from this group that are not given here. We can use the letters D, B, G, P, etc., and make the combinations AD, AB, AP. A great many words can be made when we have learned these groups. Example: mad, cap, rap, etc. If the letter O be put in the place of A, a whole different set of words is made (OP, OD, OG, OB). The exercises on page 737 use the short sound of E, I, and U. Combine these letters in the same way as you did the A and the O with the letters M, N, B, D, T, etc, and make as many words as you possibly can from them. We shall enjoy the game of seeing who can make out the greatest number of words.

FOUR LETTER WORDS

It will be very easy for us to learn the four letter words after we have worked with the words of three letters. We know a-t spells at. It is but a step farther to learn a-t-e spells ate. Then we can work with the combinations, ate, ade, abe, age, ale, ape, etc. Let us find all the words we can with *ate;* late, gate, fate, etc., then all we can with ade; made, fade, etc., and so on. Then we can go on to abe, age, ale, etc. In the same way words are built up with e, i, o, u, in place of a.

Exercises with the following combination will be found most helpful.

ing	*ong*	*ung*	*ang*	*ink*	*ank*	*unk*	*ash*
SING	SONG	SUNG	SANG	RINK	BANK	BUNK	SASH
RING	LONG	LUNG	RANG	SINK	SANK	SUNK	HASH

ush	*ist*	*ack*	*ill*	*and*	*eep*	*ay*	*ow*
HUSH	DIST	ECK	ELL	END	KEEP	DAY	COW
RUSH	FIST	ICK	ALL	UND	SLEEP	SAY	NOW
		OCK	ULL	OND			HOW
		UCK					

est	*ump*
AST	OMP
UST	AMP
OST	IMP
IST	EMP

AM
Spells
AM

HAM

JAM

RAM

AN
Spells
AN

CAN

FAN

PAN

VAN

AT
Spells
AT

BAT

CAT

HAT

RAT

OX
Spells
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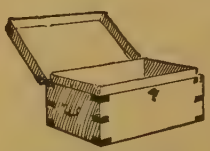
OX

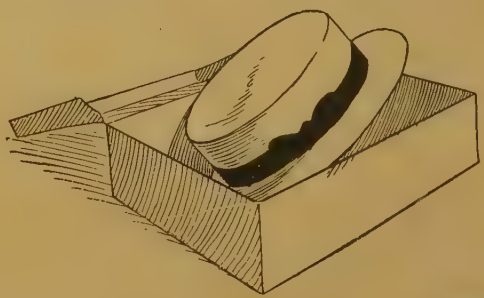


BOX

FOX

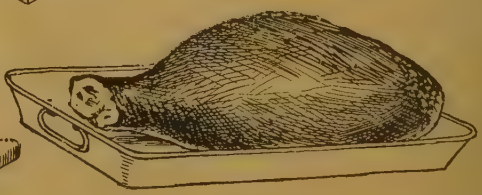
A

HAT



IN A

BOX



A CAT ON A MAT | A HAM IN A PAN

PRIMARY READING LESSON

THIS series of reading lessons, based as they are upon some of the most loved nursery rhymes, is made out with the belief that children learn to read easily if the first reading lessons are founded upon ideas with which they are already familar. Every child knows, or should know, some nursery jingles. The children who know the rhymes which furnish the subject matter for this series of lessons, should begin the work of learning to read with much interest and with very little difficulty. The sentences are based upon ideas contained in the rhymes themselves. Each series is arranged to provide as nearly as possible for an interest in something with which the child is familiar. He should soon learn to read whole words, groups of words and whole sentences. As he moves on to the next set of lessons, he is carried a step farther in his reading work. New words and new sentences are added, and old ones constantly reviewed. In a short time a large reading vocabulary is acquired.

Jack and Jill went up the hill,
To fetch a pail of water,
Jack fell down and broke his crown,
And Jill came tumbling after.

See Jack!
See Jill!
See Jack and Jill!

Who fell down?
Jack fell down.
Who fell tumbling down?
Jill fell tumbling down.

See the hill!
Jack went up.
Jill went up.
Jack and Jill went up the hill.

See Jack and Jill!
Jack fell down!
Jill fell down, too!
Jack and Jill fell down.

ACTION SENTENCES

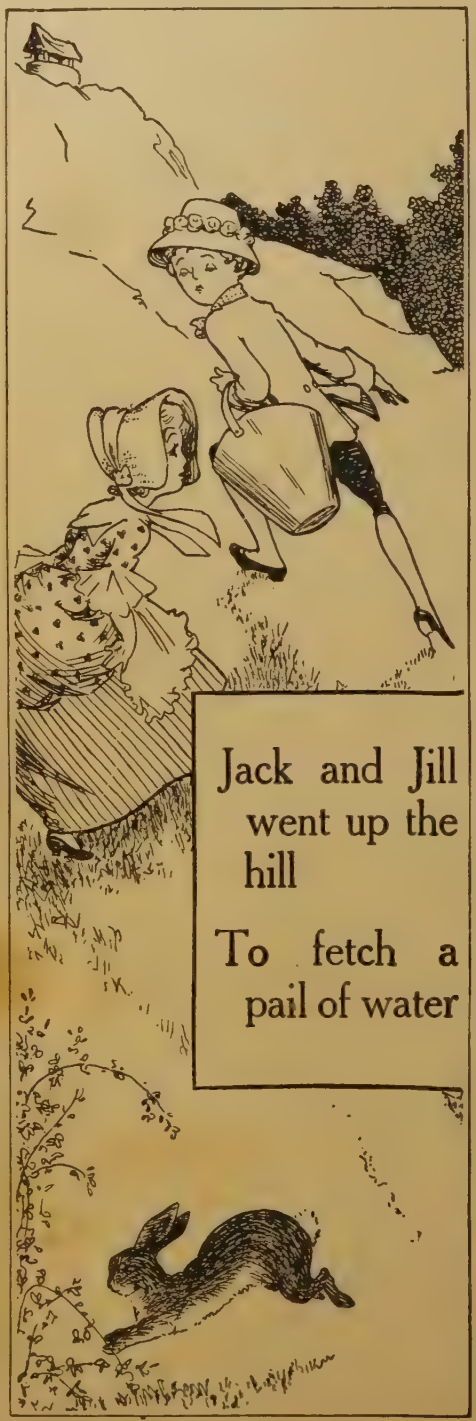
Play you are Jack.
Run up the hill.

Get some water.
Jump up! Run away.

The "Action Sentences" on this page are to be read by the teacher and acted out by the pupil. In time the pupil should be able to read the sentences to himself, without help. Then he should act them out without suggestion from any one to show that he has read them correctly.

The pupil is not held responsible for every word in each series of lessons. In this lesson he should be able to recognize such words as Jack, Jill, tumbling, see, hill, and such phrases as "went up," "tumbling down," "fell down," "Jack and Jill." These words are impressed upon his mind through repetition in the sentences.

JACK AND JILL WENT UP THE HILL



TOM AND NORA AND THE POT-HOOKS

SOON after breakfast, Tom and Nora fetched their chalks, paper, pencil, and ruler, and put a chair ready for their mother. When she came, she said: "Before we start writing we must see that we are sitting in a nice, easy way, in the middle of our chairs, with backs straight, heads up, shoulders well back, arms and hands alone touching the table, and the left hand resting on the paper to hold it down. That's right. You are both sitting nicely."

"Mother," said Nora, "you said we should make the letter i to-day. Do you think we can try without our crutches?"

"No, Nora, not yet," she replied. "We are not even going to start with the letter i. There is something to do first, and that is to make *pot-hooks* and *pot-hangers*."

Tom asked what these were, for he had never heard of them.

"You shall see some," said his mother, who had been busily ruling lines. "Watch me make a pot-hook. We call it a pot-hook because it is like the piece of hooked iron that is used to lift or hold pots. Cook uses one for taking off the stove-lid."

Then she made some pot hooks, starting between the lines, and making a curve up and round to the right, and ending in a thick down stroke, like this:

Tom found the pot-hooks rather difficult to make by himself, evenly and neatly, and all alike. Some were fat and others thin, and one or two seemed trying to jostle those in front along; but they were all about the same height, because, as he said, the railway lines made him stop when he wanted to go too far up or down.

When Nora had finished her row with violet chalk, her mother said: "Well, Nora, which do you think the best?"

Nora looked carefully along her row, and said, with a little sigh: "Oh, mother, I think one of yours is the only best, but perhaps if I try hard again I can make better ones."

"That's right," said her mother. "Think of ever so many hooks like the end of grandfather's big walking-stick, and make them all alike. Thinking of something we know often helps us to do something new and strange. Now we are going to make some pot-hangers. See, I begin by making a stroke downwards, but, near the bottom line, turn round and down to the right, touch the line, and curve up in a stroke which is lighter than the down stroke, like this:

The children wrote with their green chalks over their mother's penciled outlines, and then by themselves. While writing Tom thought of the hook on the door where his coat was hung up. "I see why this is called a hanger," he said; "but why a pot-hanger?"

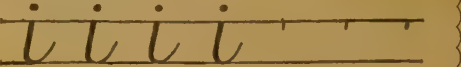
"Yesterday," said his mother, "when we were walking through the wood, we saw some gipsies boiling their food in a pot hung over the fire by a hook. Our pot-hangers are something like that. Let us turn our paper upside down, and look at the pot-hooks we made a little while ago."

"How funny!" cried Tom. "They have just changed into each other!"

"So they have," said Nora, "and a pot-hook upside down is not a pot-hook, but a pot-hanger."

"Are we going to write i soon?" asked Tom.

"I think you can write i already," was the reply. "Just see. This is i." And, having ruled more lines, she made this letter for them to write over, and copy in black chalk:



"It looks like a pot-hanger!" exclaimed Nora.

"So it does, only it has a little dot over it. We can think of that as a tiny black eye, like a wee fly's eye. That will help us to remember letter i. Each letter i has its own little eye, and the eye does not belong to the neighbor next door."

Tom and Nora were eager to write letter i. They used their red chalks for it, and found it quite easy to make.

For several days they practised making pot-hooks, pot-hangers, and i, and then their mother said they were ready to write u, n, and m, in lead pencil.

Nora asked her father for three pencils, one for her mother, one for Tom, and one for herself. As her hands were very small, she could not sharpen them herself, so she begged her father to make three beautiful points.

"Here, Nora," he said, as he handed them to her, "I shall expect you and Tom to make the nicest u, n, and m I have seen yet; they will be so fine we shall want to have them framed."

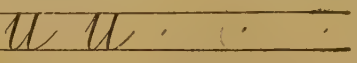
Nora laughed, and said:

"Oh, no, father; but we are going to try very hard." And she went off to get paper and ruler.

Her mother said they must still have lines, and she ruled them just as before.

"We are going to make u first," she said; "it comes a long way down the alphabet, but it is such an easy letter for you now that you both make i so well. Now watch me."

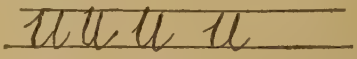
Nora and Tom looked, and were surprized to see their mother make a pot-hanger with a short, upward stroke before it, and then another pot-hanger; but instead of leaving a space between them, she joined the second one on to the end of the first, keeping the pencil on the paper all the time. She wrote very lightly, and made the down-strokes thicker than the up-strokes, and put little ticks to show where the letters were to begin, like this:



Nora thought u was very like two things she could make already—two pot-hangers together, and two i's together without their dots.

Tom was getting on finely between his railway lines, when, snap! went the point of his pencil. Then he had to wait for a new point to be made. He was careful after that not to press so heavily on the paper, for he saw that the point could be broken very easily.

Nora waited for Tom to finish his line, and then they both started afresh without any guide but the lines above and below. Tom found he had to be very careful to keep the two parts of u even distances apart. He made some too close together, and some too far apart, some above the line, and some below, like this:



"Oh, Nora, how do you do them so nicely? Do tell me!" he cried.

"I think," said Nora, "that I look first, and think where my pencil is going. You see, if we don't think just where the pencil is going, and how much room we shall want, the letters will never make a nice neat row."

Tom watched Nora make a u, and after looking carefully at his mother's copy, he tried again, and this time made quite a nice line.

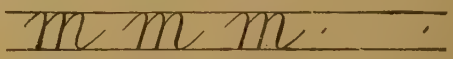
"N will be easy now," said their mother, as she ruled some more lines. "You shall say what it is like."

But she had only made half of it when Tom said, "That is a pot-hook," and as she finished it Nora exclaimed, "That is a pot-hook ending in a pot-hanger, just as if it had a little curly tail like Fido's."

"I keep my pencil on the paper until the end of the letter," their mother said "and make good round curves. We should be very careful about that, because many people who write fast make u and n just alike, and waste the time of other people who try to find out which is meant.

"N is your letter, Nora; but it is a small n, and people's names begin with big or capital letters. We will make them later on. The other letter we have to make to-day is m."

"Oh, yes, mother," said Nora, "that is your letter, so we must make very nice ones. I wonder if it is a hard letter."



"No," said their mother. "You will not find it at all difficult now."

When m was written, Tom and Nora saw that it was just like n with another pot-hook in the middle, and they found it quite easy to write.

"That is enough for to-day," said their mother. "When you have practised these letters and can write them well we will try some others."

HOW CHARLIE COUNTED TWELVE

WE can all remember how Charlie learned to count six, the day he went for a walk with Uncle Jack. Let us see whether we can count the owls in the picture: one—two—three—four—five—six.

But it is time that we knew the names of the numbers which come after six. Charlie counted six crows, so we will see how many birds there are when we count the six crows and the six owls.

Six owls are sitting on this branch. Two are at one end and four at the other. So two and four make six.

Well, say "six" to begin with. Then the first owl—the one with his eyes shut—makes *seven.* Another owl makes *eight;* another one makes *nine;* the white one makes *ten;* the next one makes *eleven;* and the last one makes *twelve.*

Now let us count them all once more, and try to remember the names of the numbers—one, two, three, four, five, six; that's all the crows. Seven, eight, nine, ten, eleven, twelve; that's all the owls.

But we have been learning a great deal more than to count as far as twelve. We have really been adding numbers together. When we put a number of things to another number, and count how many there are altogether, we are adding the two numbers together. So, when Charlie saw five crows on the ground, and another crow flew down to them from a tree, Charlie found out that *one* added to *five* makes *six.*

We can do another problem with the picture of the owls. How many do two and four make? You see, there are two owls sitting together at one end of the branch, and there are four more sitting further along. Now, when we counted them before, we found one, two, three, four, five, six owls; so we have learned that *two* and *four* make *six.*

If you do a lot of little sums like that, you will soon be clever enough to tell the answer without having to count the things in the pictures, without even having to think much about it. Suppose we do one more, just to make quite sure of the way. We will find out how many seven and five make.

If you look at the next picture, you will see seven little chickens with their mother, and five other little chickens by their water-dish. Count how many chickens there are altogether. There were seven in the first lot; then, going to the other chickens, we say eight, nine, ten, eleven, twelve; so that *seven* and *five* make *twelve.*

Shall we see what else we can learn from the picture of the owls? Suppose the two sitting at the end flew away, how many would be left? If we count them, we find one, two, three, four. So, as there were six at first, we have found that *two* taken away from *six* leaves *four.*

This is called subtracting two from six. It is really just the same thing as adding, because we have only to count how many owls must sit on the branch with the first two to make six altogether.

In just the same way with the chickens, we know that when there are *seven* with their mother it takes *five* at the dish to make *twelve* altogether; so that five from twelve leaves seven, and seven from twelve leaves five.

You remember when we counted six crows and six owls, and found it made twelve birds altogether? How many

Here are twelve chickens with their mother. Five are at the dish and seven round the mother. So that, if we take five from twelve, seven are left.

sixes were there? Two, of course. The crows made the first six, and the owls the second six. So that, instead of saying six and six make twelve, it would mean just the same thing if we said *two sixes* make *twelve.*

See, now, whether you can tell how many *threes* there are in the chickens.

THE LITTLE CHILD'S NEW COUNTING RHYME

1
2

WE ARE GOING TO THE ZOO

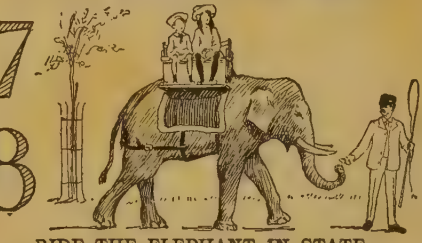
3
4

WE WILL HEAR THE LION ROAR

5
6

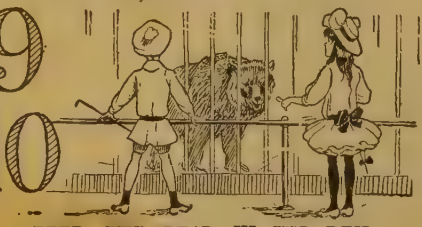
SEE THE MONKEY AT HIS TRICKS

7
8



RIDE THE ELEPHANT IN STATE

9
10



FEED THE BEAR IN HIS DEN

11
12

WATCH THE LITTLE MOLES THAT DELVE

1
2

THE COCK CREW

3
4

HEAR THE BULL ROAR

5
6

THE CLOCK TICKS

7
8

CLEAN THE GRATE

9
10

ARE PIT-MEN

11
12

FOR COAL THEY DELVE

Count one, two, three; then one, two, three again; and so on, till you come to the last of them. How many times have you said "One, two, three"? Four times. So there are *four threes*.

Now count how many fours there are. You will have to say "One, two, three, four" how many times? Three. So there are *three fours*. But the number of chickens is the same each time you count, so we know now that *four threes* are exactly the same as *three fours*.

In the same way you can count the owls, and find that *three twos* are exactly the same as *two threes*. Or the chickens, again, will show that *six twos* are just the same as *two sixes*.

When Charlie could count up to twelve without making any mistake, Uncle Jack said that next time he should learn a shorter way of writing all the numbers, instead of having to spell their names.

"Now we can finish our rhymes," said Charlie.

"Yes," said Uncle Jack.

Seven, eight, ride the elephant in state.
Nine, ten, feed the bear in his den.
Eleven, twelve, watch the little moles that delve.

"And I shall finish mine," said Fred.

Seven, eight, clean the grate.
Nine, ten, are pit-men.
Eleven, twelve, for coal they delve.

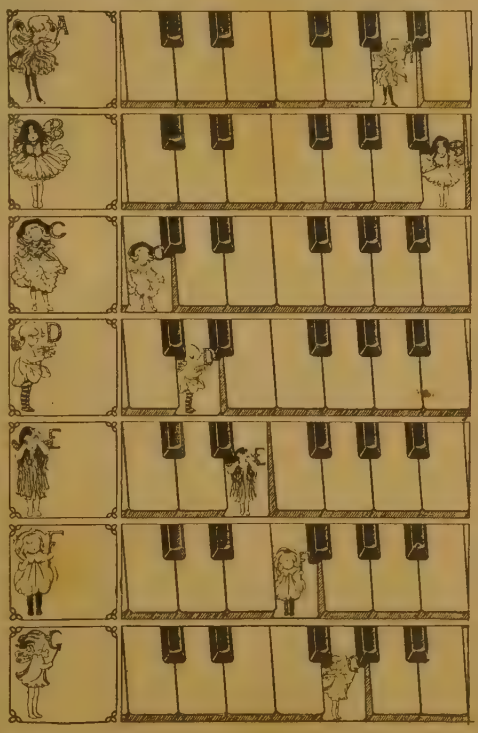
"Very good," said Uncle Jack. "I will make a drawing of the rhymes."

And on the opposite page are the pictures that Uncle Jack drew.

ANOTHER GAME WITH THE PIANO FAIRIES

ONCE upon a time, in a country far away, a very beautiful flower was found. It was so beautiful that all the people in the land wondered. But there was in this country a little girl who loved the flowers very much, and when she heard everyone talking about the beauty of this little blossom, she thought she would like to go and talk to it. Day after day the tiny girl bent over the flower, and in time she learned its secret, which could only be whispered into the ears of a loving little child. The flower told her she might tell this secret to all who wanted to learn about the beautiful, and this is what it was.

In the flower lived a fair and noble princess. No one ever saw her, but her great beauty and goodness shone through the flower and made a wonderful light, which was so beautiful that all who saw it were made glad.



This little picture of the home of the seven fairies will remind you of the address of the fairies you learned from the picture which is on page 265.

Now, our seven little fairies are very much like the good and beautiful princess, only instead of living in a flower, they live in our magic kingdom, the pianoforte; and instead of shedding a beautiful light, they speak to us through their sweet voices.

Would it not be delightful if you and I could know each fairy voice so well, directly we thought of one of our seven little friends, that we could sing her note?

Well, there is only one thing to do. We must ask the fairies to play another game. We will knock first at

Fairy C's door. We will choose that house of hers which is almost in the middle of the long white line, remembering that her houses are always found on the left-hand side of the group of two goblins' houses.

To knock at her door so that we may really hear her voice in answer, we must press down the little white piece very gently, very firmly.

Listen! Do you hear her? It is Fairy C's voice. We will try if we can sing the same sound exactly. Try it a great many times, and then, when we think we know it quite well, we will run away to the end of the room and sing it again, coming back very quickly to our magic kingdom to see if we have remembered it rightly.

Fairy C likes to hear us say "This is Fairy C's voice," and she will always sing to us if we go to her house, C, and press the door very gently and firmly.

When we have played as long as we like with Fairy C, we may go to her next-door neighbor, Fairy D. Fairy D's voice is not quite like Fairy C's, is it? We will press the door here, too, and listen to the answer, and then try and sing the same sound.

But we must not forget Fairy C's voice, so we will touch the door again gently, and listen. Now we will go back to Fairy D, to be quite sure that we know each fairy's voice.

But we must not forget that there are more fairies, and so we go to Fairy E's house and learn her little "note," and then to Fairy F and Fairy G, until we reach Fairy C's second little house.

If we have a fairy concert every day, we shall soon come to know all the beautiful fairy voices quite well.

DRAWING

HOW TO DRAW A PLAIN ENVELOPE

WE must learn next how to use our pencil properly. We shall want some more materials, and it is well to have everything ready before we begin.

First, get a large sheet of white cartridge paper, and pin it on to your drawing-board with drawing-pins. You will also need to have a drawing pencil, marked with a *B* next to the maker's name. Do not get any indiarubber. See that your paint-box and paint-brushes are quite clean, and that the jar of water is ready, too. To-day you will want a small sponge and a piece of clean white blotting-paper. Though you will only want to use a pencil for the first part of the lesson, it is well to have everything ready before you sit down to work.

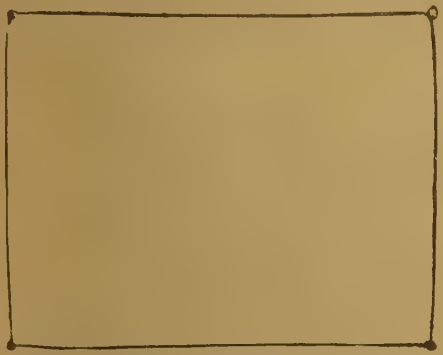
Sometimes it is difficult to find chalk or charcoal directly you want it, but you can generally find a pencil and a piece of paper. But as we should always be trying to draw the things we see around, it would be nice to have a drawing-book that you can carry about; this is better than the large pieces of paper you use for your drawing-lesson. But remember not to make tiny sketches, but always to draw as big as the paper will let you. Before you begin, just think where your drawing will look nicest on the page. Do not squeeze it up too much in a corner. Put it in the middle and leave a small margin round.

We will start with something very easy this time, but be very careful about the pencil you use and the way you hold it. If it is a new one, it is rather long for little fingers. Ask someone to cut it in two, and to sharpen one piece so that it has a flat point like the edge of a chisel. The other one should be sharpened in the ordinary way.

To begin with, there are two very important things to remember. First, hold your pencil half-way down and use the flat side of the point. Secondly, always begin a drawing on the left-hand side.

Now get a large envelope. If its sides are all equal, it is a square one; but if it has two long sides and two short ones, it is an oblong one. It does not matter which shape you use, but you must think how you will place it on the paper, as it is to be drawn six times over altogether.

Put the envelope on the paper at the right-hand top corner, and, using the pencil with the ordinary point, make a line all round the edge. Take the envelope away and there will be pencil lines like the shape of the envelope. But perhaps the four corners will not be finished nicely; if so you must join them properly. Now put the envelope again



Lay an envelope on your drawing-paper. At each corner mark the paper with a dot. Then draw a straight line, not using a ruler, from dot to dot.

After you have done that, make the outline without having made any dots. Then, to make it look like the back of an envelope, draw two lines across.

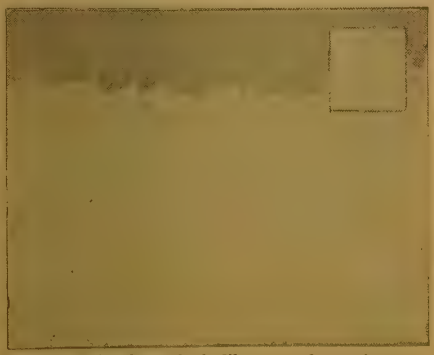
on the paper, in the left-hand corner this time, and make four dots where the corners are. Take the envelope away and try and join the dots together, using the pencil with the chisel-point. Now, underneath the first drawing, try to make a copy of it without using any dots. Do this three times, and the last two ought to be good enough to paint.

Choose the two best, and in the corner of one draw a stamp; on the other draw lines across from corner to corner to make it like the back of the envelope. You can chalk or paint the stamp red or green, and write the address of someone you know on the envelope, and it will look quite real. Perhaps you would like to paint the envelope pale blue. This is difficult to do well.

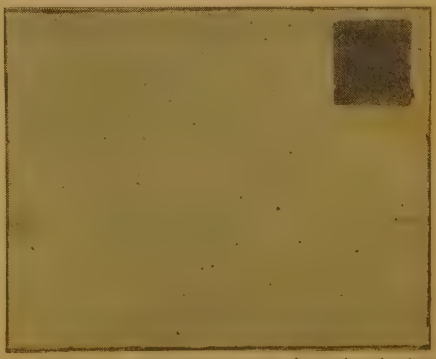
First dip your sponge in water and damp the place you want to paint all over—it must not be too wet, only damp. Hold the paper level with your eyes; if it shines or glistens, it is too wet, and you must blot it with the clean blotting-paper till it is not shiny at all. Now mix some cobalt blue with a good deal of water to make it pale. Take a good brushful of color and pass the brush quickly across the top line from left to right. Go back to the left again, and put on the color with short, downward strokes of the brush, going towards the right and leaving the stamp white.

Repeat this till you have filled up the space, taking a fresh brushful of color at the beginning of each row. You will find that you have a pool of wet color lying along the bottom line when you reach it. Get your brush quite clean and nearly dry, drag it through this pool, and it will take away all the color that you do not want.

This way of painting is called "putting on a flat wash." It ought to look quite smooth and even, but it needs a great deal of practice. The blue wash must be quite dry before you paint the stamp, or the edges will run together.



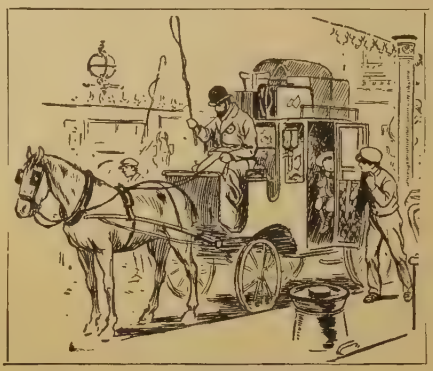
To make the front look like a real envelope you must draw a small square for the stamp, and then put a thin wash of blue over the rest of the surface.



The stamp in the corner must be colored also; and as you should not stick on a real stamp, you will have to color the little square red.

LITTLE PICTURE-STORIES IN FRENCH

THIS story is continued from page 270. This part tells us of the arrival at the railway station. We must be sure to remember that the first line under the picture is the French, the second gives the English word for the French word above it, and the third line shows how we make up the words into our own language.



A la gare—At the station

Nous sommes maintenant à la gare.
We are now at the station.
We are now at the station.

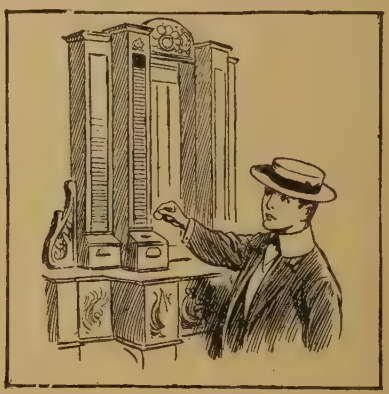
L'horloge—The clock

Il y a une grande horloge à la gare.
It there has a big clock at the station.
There is a big clock in the station.
Il est dix heures et demie du matin.
It is ten hours and half of the morning.
It is half-past ten in the morning.

Les malles—The trunks

Le porteur emporte nos malles.
The porter takes away our trunks.
The porter is taking our trunks away.

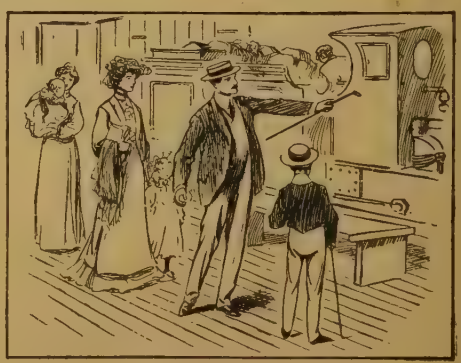
Nous voyons une machine automatique.
We see a machine automatic.
We see an automatic machine.



Une machine automatique—An automatic machine

J'ai mis deux sous dans le trou.
I have put two cents in the hole.
I have put two cents in the slot.

Papa et maman viennent nous chercher.
Papa and mamma come us to seek.
Papa and mamma are coming to look for us.



Les locomotives—The engines

Ils nous font voir les trains.
They us make to see the trains.
They show us the trains.

J'aime les locomotives.
I like the engines.
I like the engines.

Notre train est en vue. Il entre en gare.
Our train is in sight. It enters in station.
Our train is in sight. It is coming in the station.

Le train—The train

La fumée nous entre dans les yeux.
The smoke us enters in the eyes.
The smoke is getting in our eyes.

Le porteur—The porter

Le porteur met nos malles dans le train.
The porter puts our trunks in the train.
The porter is putting our trunks in the train.

Un compartiment—A carriage

Papa choisit un compartiment.
Papa chooses a compartment.
Papa is choosing a compartment.

Nous montons dans le compartiment.
We mount in the compartment.
We get into the compartment.

On crie: "En voiture!"
One calls: "In carriage!"
Someone calls: "All aboard!"

Un monsieur court—A gentleman runs

Un monsieur court de toutes ses forces.
A gentleman runs with all his might.
A gentleman is running with all his might.

Il manque de tomber. Que c'est drôle!
He misses to fall. How it is funny!
He nearly falls. How funny it is!

Maman nous installe, chacun dans un coin.
Mamma us settles, each in a corner.
Mamma settles us, each in a corner.

En route—On the way

On ferme les portières.
One shuts the doors.
The doors are shut.

Le train part. Nous sommes en route!
The train starts. We are on way!
The train starts. We are on the way.

THE NEXT SCHOOL LESSONS ARE ON PAGE 737.

THE FIERCE SEA-ROVERS WHO PLUNDERED ENGLAND

In the dark and bitter times which fell upon England a thousand years ago, fierce and wild tribes of men poured down upon the shores, destroying the peace of the English people, setting fire to their monasteries and churches, and plundering their cities. They were the Danes, the hardy sailors who lived in the lowlands of Denmark and Sweden and along the coast of Norway. This picture shows how the Danes, the fierce sea-rovers of the ninth century, swept down upon other lands and took possession of them.

THE HISTORY OF ENGLAND

WE read here of the beginnings of a nation. After the Romans had gone, there came to England many tribes from across the North Sea, dividing the country into little kingdoms, and there was much fighting. The fierce Danes, too, swept down upon the land, plundering and burning. In the midst of these troubles rose up Alfred the Great, who began the navy, encouraged learning, and set the country in order. But after his death the Danes obtained power, and three Danish kings ruled in England. The English king was driven out, and his son Edward was brought up in Normandy. But the people threw off the Danes, and Edward came home. When he died, Harold was chosen king. Duke William of Normandy was angry when he heard of this, because Edward and Harold, he said, had promised him the crown. He went over and defeated Harold at Hastings, and with this coming of the Normans the building up of the nation began.

THE FOUNDING OF THE NATION

CONTINUED FROM P. 352

THERE were long cold winters on those flat and sandy shores round the south-east corner of the North Sea, from where the new-comers into England came. The meadows by the marshes, the dark woods behind them, could not afford enough food for the people who lived in the homesteads around; for, as time went on, more and more tribes of the same family of nations pushed nearer to the sea, till all were overcrowded.

So it came to pass each spring, "when the birds began to twitter in the sunshine, and the brooks and rivers ran gaily singing to the sea," that some of the youngest and strongest of the people set out to find new and more roomy homes, where they could hunt, and fish, and grow grain to feed their families.

Truly a desperate sight it must have been for the poor "guardian of the shore" in Kent or elsewhere, when the long, narrow boats, with imposing figureheads, came swiftly towards him. In most cases resistance was useless. The tall, strong men, with flowing hair and bronzed faces, glittering swords and shields, leaped ashore one after the other, and before long were masters of some desirable piece of land, if possible near the mouth of a river or in a sheltered bay. Then and there chiefs, such as Alfred or Clapa, or families like the Billings or the Harlings, set up their *ham*, or home, their *ton*, or town, as at Clapham and Alfreton, Billingham and Harlington. We can, by names such as these and many others—such as *wick*, meaning a village; *staple*, a store—trace their settlements along the shore, up the courses of the rivers, and across the fertile plains. These names are still in use, and are written on the maps to-day.

The maps also still show us, to some extent, where the different tribes of new-comers settled. Although they belonged to the same great family, they bore different names. The Jutes settled in the Isle of Wight and in Kent, which still keeps its name from an old British tribe. Branches of the Saxons, the South, East, and Middle Saxons, made their homes in Sussex, Essex, Middlesex. There was also Wessex of the West Saxons. The Angles took up their abode in East Anglia, the country of the North and South folk—Norfolk and Suffolk; and in Lincolnshire. It was the Angles who in the end gave their name to the whole country, which became Angleland, or England.

The fighting for territory went on for a long time, but gradually the families began to feel at home in their *hams* and their allotments—for which they really cast "lots." In the commons of to-day, so glorious with golden furze and old white-thorn trees, we can tread, as they did, the piece of land

left open and "common" to those settled near it. They had "common rights," as people have now, to gather wood and bracken, and let their animals roam about.

EGBERT, THE FIRST OF THE FIFTY RULERS OF ENGLAND

For some years the country was divided up into several kingdoms, such as Kent, Wessex, Mercia, Northumbria. Often they were bitter enemies; but at last, at the beginning of the ninth century, they all acknowledged one overlord, Egbert. He has been called the first King of England. There have been more than fifty rulers since then.

The shires, or divisions into which the country is cut up, so that each part can govern its own affairs, were formed by degrees in these old times. The word *shire* comes from a word like *shears*, meaning cut off. Sometimes the shire was one of the old kingdoms, or a part of one. Sometimes it was named after a town of importance, such as Derby-shire.

The family treasures, as we can see in the Anglo-Saxon Room at the British Museum, are dug up from all parts of these shires. In Lincolnshire a railway cut goes right through a large cemetery. On the breezy downs of the Isle of Wight many warriors were laid to rest, with their weapons and ornaments beside them. Numbers come from Kent. How beautiful those swords and knives must have looked when they were new and bright! It was the mother who gave the weapons to the lad when the time came for him to follow his father to battle or the chase, bidding him keep them till death took them from him.

THE JEWELS OF MOTHERS, NAMES OF CHILDREN, AND HYMNS OF PREACHERS

Those fine necklaces, brooches, rings, gold thread and precious stones from old embroidery, bring to mind those English mothers of long ago. One of them, in an old story told round the hearth, as we tell stories now, earned the title of "faithful peace-weaver." Could anything be better? The beautiful drinking-horns and glasses without stands carry us to the halls where the families rejoiced. The names of the children who wore those small bracelets may well have been Edith or Ethel, for these names, as well as the boys' names of Edgar, Edwin, and Edward, have come down from these times.

The sculptured stone cross reminds us that missionaries came over from Ireland to preach to the wild north; others came from Rome to the south to persuade men to give up the gods of their forefathers and become Christians. There was a long, fierce struggle before they succeeded. Woden, the god of war; Thor, the god of thunder; Freya, the goddess of peace and plenty, are still recalled as we speak of Wednes-day, Thurs-day, Fri-day.

A fine cross was put up a few years ago near Minster, in the Isle of Thanet, to mark the spot where Augustine, the Roman missionary, landed towards the end of the sixth century. Headed by a painted cross and waving banners, he and his clergy set out for Canterbury from here, chanting hymns and prayers as they went. This stone cross is copied from the old ones, some much larger than the one in the museum, set up in Ireland and the north by the missionaries of old to remind their hearers of the Gospel story after they had passed away. Many of these are still to be seen.

EDWIN, THE GREAT KING WHO FOUNDED EDINBURGH, OR EDWIN'S TOWN

The pillow-stones, which were found under the heads of nuns, make one think of the numbers of women, as well as men, who were often thankful to retire, in those rough times, to the quiet of a religious house, to read and write, to think and pray.

Edwin was one of the greatest of the first Christian kings. It was he who founded Edinburgh—Edwin's "burgh," or town. He needed a strong fort to protect the fertile lands to the south of the Forth—the Lothians of to-day—and to hold the roads from the north. The castle rock between the hills and the sea gave the needed protection to the town which grew up round its base.

About this time arose the first English poet, from a religious house or monastery on the cliffs above Whitby, in Yorkshire, to which he had retired when his great gift of song was discovered.

On the same coast, a little further north, where now is heard the great noise of iron shipbuilding, there lived and died the great scholar and writer Bede, often called the Venerable Bede. He spent his whole life learning and teaching, and translating and writing books for the pupils who gathered round him. His

THE PREACHING OF CHRISTIANITY IN ENGLAND

ST. AUGUSTINE PREACHING CHRISTIANITY TO ETHELBERT, KING OF ENGLAND

ST. AUGUSTINE BAPTIZING THE EARLY ENGLISH

The English people knew nothing about Christianity until long after Christ was born. About the year 600 A.D. a monk, struck by the sad sight of some English boys being sold for slaves in Rome, set himself to think out a plan for sending the Gospel into the boys' country. He became Pope Gregory the Great, and sent Augustine with forty companions to England, but Christianity had been preached there long before.

chief work, perhaps, is the history of the Church of the country, which has gained him the title of the first English historian.

THE BOOK OF THE OLD SCHOLAR, BEDE, AND THE STORY IT TELLS

There is still a copy of Bede's book to be seen, written in Latin, in one of the most precious cases in the British Museum—the eight-sided one, which contains the manuscripts from which we learn the earliest English history. Bede's book is open at the page which tells the old story of how Augustine was sent to preach to the English. The handsome, fair, blue-eyed boys, being sold for slaves in the market at Rome, attracted the pity of a young monk, afterwards Pope Gregory. He made a joke on their name when it was told him. "Not Angles, but Angels," he said, "they are so beautiful." As soon as he had the power he sent Augustine and a band of missionaries to carry Christianity into the boys' country.

Many another story does Bede tell. He sent all over the country to gather all the information he could, and as one reads the account of his gentle ways and his hard work to the very end of his life, one feels a great love for the saintly man.

But once more dark and bitter times fell upon the land, and learning and peace were again destroyed. Hardly had Egbert of Wessex made himself overlord of the country from the Forth to the Channel, at the beginning of the ninth century, when sea-rovers poured into it.

HOW THE FURIOUS DANES CAME DOWN UPON ENGLAND

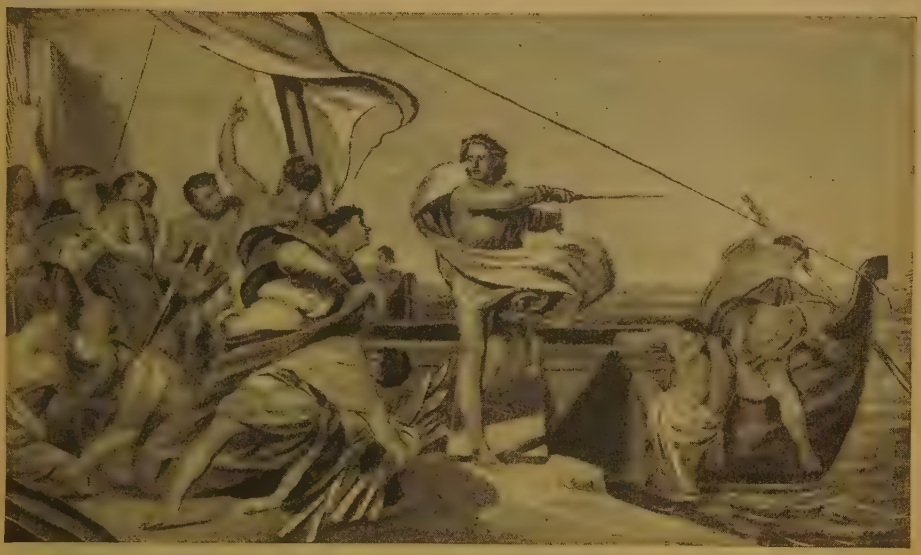
They were even more fierce and wild than the English tribes had been three centuries before. They, too, came in fine boats, often blazing with color, sometimes black as night, with high, carved figureheads, and the dreaded Raven banner at the mast. They came across the North Sea, like the Jutes, and Saxons, and Angles. Their homes were in the lowlands of Denmark, in Sweden, and along the jagged coast of Norway. All were of the same stock—Danes; North, or Norse, men; Vikings, or men of the creeks. "From the fury of the Northmen, good Lord deliver us!" was the prayer of the Christians they attacked. All the Northmen particularly hated and despised the religion which had taken the place of the old one to which they fiercely clung. So over the stricken land flames went up from the monasteries and churches, and those who had sought refuge in them were slain. Think of it! Caedmon's haven of rest at Whitby was not spared, nor Bede's at Yarrow, nor the beautiful abbey on the little island of Lindisfarne, where Columba and Aidan, missionaries from the West, had lived. London was burnt, and the whole country plundered.

In the midst of all this, towards the end of the ninth century, there uprose one of the noblest of the English kings, Alfred the Great, the Truth-teller, the Wise. His titles and the very stories about his good nature, bravery, and industry which have been handed down to our times show how beloved he was by his subjects—a thousand years ago. When he first became king the Danes were quiet for a while, and he made good use of this peaceful time to build ships to prevent the sea-rovers landing. This was the beginning of the British Navy. He also did his best to get the country into order, and soldiers trained to fight.

THE STORY OF THE TROUBLED LIFE OF KING ALFRED THE GREAT

For a time after the return of the Danes things went against Alfred, and he had to hide. It is said that he hid one day in a swineherd's cottage where the swineherd's wife was making cakes. Not knowing the king, she let him sit by the hearth mending his bow and arrow if he would promise to see that the cakes did not burn while she was out. By the blazing red fire on the hearth sat the young king, deep in anxious thought—so deep in thought that he did not notice the strong smell of the cakes as they burnt to cinders. It was rather provoking for the housewife, and, not knowing to whom she was speaking, she scolded the king for letting her cakes burn.

Another story from this time is of his venturing alone, disguised as a singer, into the Danish camp night after night, to find out their plans. Soon after this he won a great victory, and the treaty or arrangement which followed gave peace for many years. In his wisdom he saw that the country would be ruined unless fighting could be stopped; and though he was quite a young man, he gave up any hopes he may well have had



ALFRED APPEALING TO THE PEOPLE TO DRIVE THE DANES OUT OF ENGLAND

THE ANGRY HOUSEWIFE SCOLDING THE UNKNOWN KING FOR LETTING HER CAKES BURN

In the midst of the misery and trouble caused by the fighting Danes, there rose one of the noblest of the English kings, Alfred the Great But he had a troubled life, and at times had to hide from his enemies, once in a swineherd's cottage. The housewife let him mend his bow by the fire if he would promise to see that her cakes did not burn. But Alfred was too deep in thought to notice the cakes, and was scolded severely by the housewife, not knowing to whom she was speaking, when she came back to find them like cinders.

of getting all the country for himself, and arranged to share it with the Danes. The part which the Danes had was called the Danelaw, because there the people lived under Danish, not Saxon, laws. Part of the boundary was the old Roman road which ran through London to Chester, called Watling Street.

How Alfred helped the people to make the nation great

It was not long before Alfred made his half kingdom stronger than the whole one had been before his time. He improved his army and built up forts. Then he turned his mind to making good laws with the advice of the assembly of wise men who helped him to rule the country, somewhat in the way that the Parliament helps sovereigns to rule now. Next he did all he could to teach his people. Since the Danes had destroyed the monasteries there was great ignorance everywhere, for the monasteries had been really schools in which people learned to read and write English, and Latin, which was so necessary in those times.

So Alfred called together learned men from other countries—they all understood Latin—and they wrote and translated and taught as hard as they could. Alfred himself worked with them. When he was a boy he had won a beautiful book as a prize for learning to read, and he continued to study all his life. Some think that he started the first history of England in English, called the Anglo-Saxon Chronicle. There is a copy of it in the British Museum, where there is also a famous jewel, with the words written on it "Alfred had me made." He had all the information collected that could be found about older times than his, and then added the story of his reign.

England after Alfred's death, and the spread of Christianity

After his death more was added to this, giving the history of the years as they passed for nearly three centuries. Alfred's work was carried on by his son and a very brave daughter and three grandsons, and for a time it seemed as if the Danes were going to settle down as part of the English nation without further trouble. We can to-day see on our map where they settled by the place-names. Where the English said *tun* or *ton* for town, the Danes said *by*, and so we get Whitby, Derby, and Appleby. Many other parts of names are Danish too, such as *toft*, meaning an enclosure, as in Lowestoft; *scar*, a cliff, as in Scarborough. The long Danish swords remind us of the way in which they swung them round in battle; and the combs recall the flowing hair for which they were so famous.

In a corner of the Anglo-Saxon Room at the British Museum are some relics which take us across the Irish Channel, to the land of those missionaries we saw preaching in the North of England. As we have already seen, when Christianity was preached to the Britons in the time of the Romans, the new faith spread to Ireland, and flourished there exceedingly after the heathen Angles and Saxons had stamped it out in Britain. Churches and monasteries were built everywhere—as the number of beautiful ruins in Ireland testify to this day—and many people crowded into them as they were the only refuges in those rough times.

The patient work of the monks and the missionaries

The country was divided into separate kingdoms, as it was in England before Egbert. Fierce fighting went on among them for many a long day. What a contrast there is between this state of things and the peace of the monasteries, in which were gathered learned men from all parts! The fame of the beautifully painted manuscripts from these monasteries spread abroad, and other arts that filled up the long days were working in metal and ivory and stone.

The missionaries who poured over the narrow straits near the Giants' Causeway, as the wild tribes of the Scots had done before them, found as beautiful a country as the one they had left in the Western Highlands, but it was wild and waste land they had often to pass over in Northumbria.

You will remember that Roman Britain stretched as far north as Agricola's forts between the firths of the Forth and Clyde, and that later the kingdom of Northumbria, under Edwin, the founder of Edinburgh, also reached as far. The tribes that for long had fought together north of this were united at last under a king called Kenneth, in the first part of the tenth century.

THE COMING OF WILLIAM THE CONQUEROR

THE FIRST MEETING OF HAROLD AND DUKE WILLIAM OF NORMANDY

HAROLD PROMISES THE CROWN TO WILLIAM, SWEARING TO BE TRUE TO HIM

THE CROWNING OF HAROLD AS KING, AFTER THE DEATH OF EDWARD THE CONFESSOR

DUKE WILLIAM OF NORMANDY, WHILE HUNTING, RECEIVES NEWS OF HAROLD'S CORONATION

When Edward the Confessor died, in January, 1066, and was buried in Westminster Abbey, Harold was chosen King of England. When Duke William of Normandy heard this, as he was hunting at Rouen, he was angry, and said that both Edward and Harold had promised him the kingdom—which nobody could really promise, because it was the people's right to choose their king. William came over to England with an army and a fleet, and a great battle was fought at Hastings, where Harold was killed and the bravest men of England fell around him. William had conquered, and new times began for England.

Scotland, too, in his time, also before and after, suffered much from the Northmen, who poured out of their creeks, called fiords, to the creeks or firths of Scotland. Right round the coast they went, taking the Shetlands, the Orkneys, and Hebrides, the rocky head of Scotland north of Glenmore, on their way down to the Isle of Man. Many traces of their rule remain to this day.

EDGAR THE PEACEFUL KING, ETHELRED THE UNREADY, AND CANUTE THE DANE

The name of Edgar stands out in the same century as Kenneth's. He was called the Peaceful King, which shows that he lived on good terms with his neighbors, even though the story about six kings rowing him on the River Dee may not be true.

In the time of his son, Ethelred, called the Unready, because he would take no man's "rede," or counsel, fresh bands of Danes appeared in England. Ethelred, at his wits' end, paid them money to go away, which they did; but they soon came back again for more. Matters became worse and worse, and so Ethelred fled away over the Channel to Normandy to his wife's relatives. And so Canute, the Danish king, who also ruled Norway, added England to his empire.

Canute proved to be a good king, and the country settled down for a time in peace. It was he who gave up to the Scottish king the land between the Forth and the Cheviots. For many centuries these hills remained the border between the two countries, with a wide road on the east by Berwick-on-Tweed, and a narrow one on the west by the marshy ground near Carlisle. Along these roads the east and west railway routes to the north pass to-day.

THE SMALL BEGINNINGS OF NORMAN INFLUENCE IN ENGLAND

Now, when bands of Northmen were plundering and wasting England and Scotland, others went to the northern shores of what is now France, then the land of the Franks—formerly Cæsar's Gaul—and settled there in the reign of Alfred. They gained the whole of the beautiful province called after them—Normandy, the land of the Northmen. They very soon left off speaking their own language, and learnt that of the Franks, which we call Norman-French.

These men were bold and very fierce, and they determined to take and keep all that came in their way. Their rulers were called Dukes. Emma, the wife of Ethelred the Unready, was the daughter of one called Richard the Fearless. Her son, Edward, was brought up in Normandy, after the family fled from England on account of the Danes, and as he grew up in a monastery he cared more for a quiet, learned life, and for attending services in church, than for fighting or looking after business.

So when the English had had enough of Danish kings—there were only three of them—and Edward was called back to be king, he was not at all fitted to take part in the stirring, anxious times in his fatherland, and caused much discontent by favoring the Normans he brought with him.

EDWARD THE CONFESSOR, THE GENTLE KING WHO BUILT WESTMINSTER ABBEY

A very strong English nobleman, Earl Godwin, kept him for a time in some measure to his duty. Edward's greatest pleasure was in building churches, and the most beautiful one of all was that of the Abbey at Westminster, built after the pattern of those he knew and loved so well in Normandy, with rounded windows and arches. This abbey church at Westminster has been entirely rebuilt by later kings.

It is said that Edward promised his cousin, William of Normandy, that he should be King of England at his death; in any case William determined that King of England he would be. The gentle, white-haired, rosy-faced king—the Confessor, as he was afterwards called—died in January, 1066. He was buried in his fine new church, finished only a few days before. Later, a beautiful tomb was raised over him, which we can see to-day in its present place in the heart of the Abbey.

Now, the year 1066, which opened thus, was an important year for England, full of stirring history. The day after the weeping people had crowded the Abbey to see the funeral of Edward they came back again to crown the successor whom they had chosen—Harold, the son of Earl Godwin, whom they knew to be brave and wise, and a hater of the Normans.

And so, on that bright, sunny day in the keen north wind of January, the

roof rang again with joyful shouts of "Yea!" when the old archbishop asked if they would have Harold for king.

WILLIAM OF NORMANDY COMES TO ENGLAND IN A GREAT TEMPER

When William heard that Harold had become king after Edward, he was furious, and at once set to work to get an army and a fleet together to invade England and secure the crown he longed for. He said Harold had promised him the kingdom as well as Edward; but no one could really promise this, because it was the people's right to choose whom they would have.

When William landed near Hastings, on the south coast, in the bright September weather, Harold was at York. He marched his army down south by the great Roman road to London in nine days, and very quick that was, when so many had to go on foot.

The battle that followed at Hastings is one of the great battles of history. The Normans were led out by a singer on a fine prancing horse, and the whole army caught up his song about the great hero of France and how he fought and won. The English did their best, but the Normans were too strong for them. Harold was killed, and the bravest and best men of England fell fighting around him. This was on Saturday, October 15th, 1066.

THE LONELY CROWNING OF WILLIAM THE CONQUEROR

By December William had forced the people of the south to own him as king, and he was crowned in Westminster Abbey on Christmas Day. No shouts of welcome, no bright faces, and when the question was asked, "Do you take William of Normandy to be your king?" there was but a sullen mutter; they *had* to say "Yes." William was almost alone on this great day.

Freedom for England was gone. The knights were killed, the poor were in utter misery. William gave much land and goods to his Norman followers, and, instead of paying rent in money, they had to promise to supply him with fighting men when he went to war. They made the men to whom they let land promise to do the same.

This feudal system, as it was called, lasted for many years in England. So that there should be no doubt how much land everyone had, and how many soldiers it was worth, William had a great book prepared, Domesday Book, in which is a description of all the great houses and estates in the kingdom. That book is still of great use.

THE WORK THAT THE CONQUEROR DID FOR ENGLAND

Another work of William's which lasts to this day was the making of the New Forest, in Hampshire. William made it to hunt in, and sorely distressed the poor folk who were turned out of their homes for his pleasure.

Some of the great castles William built to keep the English in order are still standing. Chief among them is the old part of the Tower of London, in which is a most perfect Norman chapel. It is said that from the gallery of this chapel William the Conqueror and his family looked down on the service going on below.

William spent a good deal of his time in Normandy, and at last died there. His sons behaved very badly to him, and he was alone in his death as he was at his coronation, when all but a few priests rushed out to join in the tumult going on outside the Abbey.

THE NEXT STORY OF COUNTRIES IS ON PAGE 589.

WILLIAM THE CONQUEROR AND HIS MEN MARCHING TO BATTLE AT HASTINGS

THE LAST HEROISM OF SIR PHILIP SIDNEY

Sir Philip Sidney lay on the field of battle, in great pain and in a raging fever. He called for a cup of water, and with great trouble water was brought to him. He was about to drink it, when his eye caught the gaze of a wounded comrade, dying of thirst. Sir Philip Sidney stretched out his arm and gave the water to the dying man, saying: "Soldier, thy need is greater than mine."

WHAT THESE STORIES TELL US

FIVE golden deeds come into these pages. Standing out nobly in the story of the English heroes is the great Sir Philip Sidney, who, when dying of thirst, gave his cup of water to a wounded soldier beside him; and many times the battlefield has brought out such pure heroism as that. And we read, too, of the heroic life of a doctor in Ireland, reminding us that we owe to our doctors a debt that we can never pay. A sister's devotion to her brother, a doctor's devotion to his patients, a soldier's devotion to his comrades—all these examples of true heroism come into these pages; and they are all true stories, taken from real life.

THREE CUPS OF COLD WATER

CONTINUED FROM 334

THERE is a saying of Jesus which has woven itself into all the history of humanity, into the periods of famine, the days of battle, and the hours of death. It is the saying that we do Christ service even when we give only a cup of cold water to those who thirst.

Seldom can the heart be lonely,
If it seek a lonelier still,
Self-forgetting, seeking only
Emptier cups of love to fill.

The brave English soldier, Sir Philip Sidney, who lived at Penshurst, in Kent, and wrote tender poems under the noble oaks which you may still see spreading their wide arms over Penshurst Park, was one of those who have lived Christ's words.

Sir Philip Sidney was called by Queen Elizabeth "the jewel of her times." He was a great scholar and traveler, a poet and musician, an athlete and horseman—above everything else, a great gentleman. The nobility of his nature, the bravery of his spirit, and the graciousness of his manner rendered him the most notable and romantic figure of his age.

In a great battle at a place called Zutphen this noble gentleman was mortally wounded. He had fought like a hero. Two horses had been killed under him, and still he led his soldiers with a dauntless courage into the thick of the fight. But at last a bullet struck this chivalrous man, and as he reeled in the saddle his horse turned and bolted with him from the field.

When he was in the camp he called for a cup of water. The day was excessively hot; he was in a raging fever; the agony of his wound was indescribable.

With great trouble a little water was brought to him. He lifted himself up, took the bottle, and was about to place it to his lips, when his gaze caught the eyes of a poor wounded soldier fixed upon the water.

The look in the man's eyes made Sidney forget his pain. With a noble smile he stretched out his arm, handed the bottle to the dying man, and exclaimed:

"Soldier, thy need is greater than mine!"

Such was the glory of Sidney that the epitaph of one of his friends was in these words:

Fulke Greville,
Servant to Queen Elizabeth,
Counsellor to King James
Friend to Sir Philip Sidney.

Another hero is famous for a somewhat similar deed. This is the generous Rudolf of Hapsburg, whose descendants still rule over Austria, a kingdom made by his power. On one occasion Rudolf was with his army in a place where everyone was afflicted by terrible thirst. Somebody was able to find a cupful of water, which was brought to Rudolf as a great and priceless treasure. He took the prized cup in his hands and exclaimed: "I cannot drink alone. All cannot share this little draught.

I thirst not for myself, but for my whole army." And, so saying, he tipped up the cup and emptied the water upon the ground.

One more we may include under our title of "Cups of Cold Water," because it shows the Christianlike spirit, although in a new and startling manner.

During the seventeenth century wars between Denmark and Sweden, a wounded Dane was about to raise a wooden bottle of water to his lips, when a cry reached him from a wounded Swede stretched on the ground at a little distance.

The good Dane, using the words of Sir Philip Sidney, stumbled to the side of his enemy, and, saying, "Thy need is greater than mine," kneeled down and offered the water to his lips. But the Swede, suddenly raising a pistol, fired, and wounded the Dane in the shoulder.

"Rascal!" cried the twice-wounded soldier of Denmark. "I would have befriended you, and you would murder me in return! Now will I punish you. I would have given you the whole bottle, but now you shall have only half."

He then raised the bottle to his lips, drank of it, and afterwards gave it into the hand that had attempted to kill him.

THE DOCTOR OF BURTON PORT

DOCTOR WILLIAM SMYTH lived in the north-west of Ireland, at Burton Port, a little coast village in county Donegal, twenty miles from a railway, and in the midst of poor fisher-folk, whom he attended for a small fee. Four miles from the mainland was the island of Inishmore, where a few families managed to exist by fishing.

In the end of the year 1901 an epidemic broke out in the island. Dr. Smyth rowed over the four miles of rough sea daily, taking with him such things as the sick folk needed. They lived in squalid hovels, and he had to be doctor and nurse too, for there was none to give him a helping hand.

At last he decided that, to save the people, he must bring them to the mainland, to have better care and nursing. But the fishermen of Button Port feared to lend their boats, lest they should catch the fever, and only one leaky vessel could be found. An officer of the Local Government Board came to the doctor's help, and together they rowed over to the island, carried the poor sufferers one by one, into the boat, and set off for Burton Port. The crowded boat proved to be more leaky than the doctor had thought, and they were barely able to bring the last patient ashore before it began to sink. All the way across, the doctor had rowed the heavy craft alone, while the officer baled the water out, and he was so exhausted that when the work was done, he went home to bed. But, as he cared for the poor people, the fever had caught him; he had no strength left to resist it, and in a week he died. He had saved many lives, but in so doing had given up his own.

THE SACRIFICE OF A KING'S SISTER

THERE was trouble and confusion in Thebes. The two brothers who ruled the city had quarreled, and one brother, Eteocles, had driven out the other, Polyneices, that he might reign as king alone. But the brother who had been driven away gathered an army with all speed, and came back to attack the city. Eteocles and his soldiers marched out to meet him, and the brothers fought and killed each other. The besieging army, having lost its leader, turned and ran away.

The new king was Creon, the uncle of the brothers, and he issued an order that the body of Eteocles was to be buried with great honor and a splendid funeral procession, but that the body of the other brother was to be left lying on the plain outside the walls of Thebes for the birds to devour.

It was thought a terrible thing in those days to leave a body unburied, and was considered to be a great insult to the man who had died. So Antigone, the sister of Polyneices, determined to bury her brother, though the king said that any one who buried or honored the body should be shut up in a rock tomb and left there to die.

Antigone went secretly from the city, and, as she could not carry the body, she scattered dust over it to honor it, thus taking away all the disgrace. The king ordered her to be buried alive in the rock tomb. As they led her away, all who saw her were moved to tears. Even the king repented of what he had done, and sent to fetch her from the tomb. But his messengers arrived to find that she had died.

THE NEXT GOLDEN DEEDS BEGIN ON PAGE 569.

THE POEMS OF LONG AGO

THERE were poets in ancient Egypt thousands of years before Jesus was born. In Babylonia and Assyria there were poets, too, thousands of years ago. But the study of poetry does not take account of these very ancient times. The finest poetry of Greece was composed more than two thousand years ago, and is read and studied to this day in all parts of the world. We are not going back here so far even as that. "Long ago" may mean thousands or hundreds of years. If we think of English poetry only, it cannot mean quite a thousand years, for the English language is not so old as that; and it is English poetry we are learning here.

THE EARLIEST ENGLISH POETRY

CONTINUED FROM P. 374

THERE were many kinds of poets and poetry before the beginning of English poetry, but Geoffrey Chaucer, who died in the year 1400, is called the "father" of English poetry because his was the first really fine poetry to be written in the English language of his day—very different from ours. We have heard about the bards who in olden times sang songs of victory after battles, or perhaps sang mournful dirges of death and defeat. Their poetry was never written, of course; but people had wonderful memories in those far-off days before the art of writing was known to them, and songs of the old bards were remembered for hundreds of years and written down in later ages, and still later put into modern words and printed.

The early bards in the British Isles were Celts, a different people from the mixed Teutonic race known as English, coming later. There are still many people descended from the Celts in Wales, in the Scottish Highlands, and in Ireland. They had two languages, Gaelic and Cymric; and both are still spoken, but they are not a bit like English. So, you see, the old Celtic poetry of the British Isles is not English poetry at all. This old Celtic poetry was full of fire and vigor and love of fighting.

The coming of Christianity into England had a great effect on men's minds, and one of the earliest poets, named Cædmon, who was a cowherd, and lived in Yorkshire, where he died about the year 680, wrote good poetry to make people rejoice in the Bible and its teaching. But Cædmon's verses, and those of the English poets for several hundred years afterward, were not in the least like modern poetry. They had no regular movement of what we call rhythm, which means the varying sounds of the words that make them like music in the mind as we read. They had no rhymes, no regular length of lines, but just sought to express the thought or vision in the poet's mind as quickly and clearly as possible. These very early poems, however, had what we call "alliteration," which means words beginning with the same letter.

In every line two or more words began with the same letter and marked a point of accent, which helped one to remember the words. Alliteration has often been used by poets, and a celebrated writer spoke of "*A*pt *a*lliteration's *a*rtful *a*id," which illustrates the meaning of the word. Here is a line from Milton showing its proper use:

Of man's *f*irst disobedience and the *f*ruit
of that *f*orbidden tree.

Examples from the early English poets would not be understood, but it is interesting to know that their idea of how poetry should be written was simply to use words at certain intervals beginning with the same letters.

For many centuries the chief scholars were the monks in the monasteries, and as nearly all their poetry was written in Latin, it does not concern us here. Indeed, we shall not say more about the writers of poetry until, further on in our studies, we begin with Chaucer, to follow the work of the great poets in their proper order.

HOME, SWEET HOME

Story-tellers often invent sad tales but, after all, no tales are so sad or strange as those of real life. Wherever the English language is spoken, the famous song of "Home, Sweet Home" has been sung for over eighty years. It is, perhaps, the favorite song in our language, expressing as it does the love of home the world over. Yet it was written by an American named John Howard Payne, who never knew what it was to have a home. He was born in 1792, and died in Tunis in 1843, after a strange career. For a short time he was a popular actor in London, and wrote a very successful opera in 1823, called "Clari; or, the Maid of Milan," in which this beautiful song was first sung. But most of his life was a failure, and he even was a wanderer without a lodging for a time after he had written his immortal song. One cold winter's night, when he was homeless in New York, he heard it being sung in a cosy house as he was passing by. And he died in Africa "an exile from home".

'MID pleasures and palaces though we may roam,
Be it ever so humble, there's no place like home!
A charm from the skies seems to hallow us there,
Which, seek through the world, is ne'er met with elsewhere.

Home, home, sweet, sweet home!
There's no place like home!

An exile from home, splendour dazzles in vain!
Oh, give me my lowly thatched cottage again!
The birds singing gaily that came at my call—
Give me them!—and the peace of mind, dearer than all!

Home, home, sweet, sweet home!
There's no place like home!

THE SANDS OF DEE

Charles Kingsley, who wrote this fine ballad, was a master of this form of poetry. How much he can tell in so little space! Notice how the weird picture of the cruel sea that drowned poor Mary is brought before our mind's eye by the repetition of certain words in the first three lines of the second and fourth verses. It is alegend that the voice of the drowned maiden can be heard still calling the cattle home. This, of course, is one of those fancies that come to our minds in listening to the strange noises of the sea.

"O MARY, go and call the cattle home,
And call the cattle home,
And call the cattle home,
Across the sands of Dee."
The western wind was wild and dank with foam,
And all alone went she.

The western tide crept up along the sand,
And o'er and o'er the sand,
And round and round the sand,
As far as eye could see.
The rolling mist came down and hid the land,
And never home came she.

"Oh! is it weed, or fish, or floating hair—
A tress of golden hair,
A drownèd maiden's hair
Above the nets at sea?"
Was never salmon yet that shone so fair
Among the stakes on Dee.

They rowed her in across the rolling foam
The cruel, crawling foam,
The cruel, hungry foam,
To her grave beside the sea.
But still the boatmen hear her call the cattle home
Across the sands of Dee.

SWEET AND LOW

A lullaby is a baby song that can be sung to the rocking of the cradle, and ought to have in it something of the music of the "rock-a-bye" movement of the cradle. How full of this gentle and soothing music is this beautiful cradle-song by Lord Tennyson, the great English poet! It is a perfect gem of simple beauty.

SWEET and low, sweet and low,
Wind of the western sea,
Low, low, breathe and blow
Wind of the western sea!
Over the rolling waters go,
Come from the dying moon and blow,
Blow him again to me;
While my little one, while my pretty one, sleeps.

Sleep and rest, sleep and rest,
Father will come to thee soon;
Rest, rest, on mother's breast,
Father will come to thee soon;
Father will come to his babe in the nest,
Silver sails all out of the west
Under the silver moon:
Sleep, my little one, sleep, my pretty one, sleep.

BOADICEA

We know what an ode is, having read about it on page 343. This is a fine poem of that class, written by William Cowper, one of the great English poets, who died in the year 1800. It is a song in praise of Boadicea, the patriot queen who roused the people of Britain in revolt against their Roman oppressors, at first with victory, but later to suffer defeat from the veteran soldiers of Rome. She died in the year 62. See page 197 for Boadicea in her war chariot. What we have learned about the old bards of Celtic England is now very useful in helping us to understand this poem.

WHEN the British warrior queen,
Bleeding from the Roman rods,
Sought, with an indignant mien,
Counsel of her country's gods,

Sage beneath the spreading oak
Sat the Druid, hoary chief;
Every burning word he spoke
Full of rage, and full of grief.

Princess! if our aged eyes
Weep upon thy matchless wrongs,
'Tis because resentment ties
All the terrors of our tongues.

Rome shall perish—write that word
In the blood that she has spilt;
Perish, hopeless and abhorr'd
Deep in ruin as in guilt.

Rome, for empire far renown'd,
Tramples on a thousand states;
Soon her pride shall kiss the ground—
Hark! the Gaul is at her gates!

Other Romans shall arise,
Heedless of a soldier's name;
Sounds, not arms, shall win the prize,
Harmony the path to fame.

Then the progeny that springs
From the forests of our land,
Arm'd with thunder, clad with wings,
Shall a wider world command.

Regions Cæsar never knew
Thy posterity shall sway;
Where his eagles never flew,
None invincible as they.

Such the bard's prophetic words,
Pregnant with celestial fire,
Bending as he swept the chords
Of his sweet but awful lyre.

She, with all a monarch's pride,
Felt them in her bosom glow;
Rush'd to battle, fought, and died;
Dying hurl'd them at the foe;

Ruffians, pitiless and proud,
Heaven awards the vengeance due;
Empire is on us bestowed,
Shame and ruin wait on you.

ALL THINGS SHALL PASS AWAY

This poem was written by an American poet named Theodore Tilton. If you read it carefully you will find that it is written with great skill and effect. For the poet begins by making us feel, with the Persian king, how vain are the pleasures and beauties of this world, since Death will claim them all; but at the end he restores us to hope by reminding us that Death itself will pass away, and the new life beyond this life of ours will then begin.

ONCE in Persia ruled a King,
Who upon his signet ring
'Graved a motto true and wise,
Which, when held before his eyes,
Gave him counsel at a glance
Fit for any change or chance.
Solemn words, and these were they:
"Even this shall pass away."

Trains of camel through the sand
Brought him gems from Samarcand;
Fleets of galleys through the seas
Brought him pearls to rival these.
Yet he counted little gain
Treasures of the mine or main.
"Wealth may come, but not to stay;
Even this shall pass away."

'Mid the revels of his court,
In the zenith of his sport,
When the palms of all his guests
Burned with clapping at his jests,
He, amid his figs and wine,
Cried: "Oh, precious friends of mine,
Pleasures come, but not to stay—
Even this shall pass away."

. . . . . .

Fighting in a furious field,
Once a javelin pierced his shield,
Soldiers with a loud lament
Bore him bleeding to his tent.
Groaning from his wounded side,
"Pain is hard to bear!" he cried.
"But with patience, day by day,
Even this shall pass away."

Towering in the public square,
Twenty cubits in the air,
Rose his statue grand in stone;
And the King, disguised, unknown,
Gazing on his sculptured name,
Asked himself: "And what is fame?
Fame is but a slow decay—
Even this shall pass away."

Struck with palsy, sere and old,
Standing at the gates of gold,
Spoke he thus in dying breath:
"Life is done, and what is death?"
Then, in answer to the King,
Fell a sunbeam on the ring,
Answering, with its heavenly ray:
"Even death shall pass away."

THE BEECH TREE'S PETITION

There is a well-known song beginning "Woodman, spare that tree," written by an American named George P. Morris. Poets often have the same idea without copying each other, and perhaps Morris may not have taken the idea of his song from this earlier poem by Thomas Campbell, in which the beech tree itself is supposed to beg for life.

O LEAVE this barren spot to me!
Spare, woodman, spare the beechen tree!
Though bush or floweret never grow
My dark unwarming shade below;
Nor summer bud perfume the dew
Of rosy blush, or yellow hue;
Nor fruits of autumn, blossom-born,
My green and glossy leaves adorn;
Nor murmuring tribes from me derive
Th' ambrosial amber of the hive;
Yet leave this barren spot to me;
Spare, woodman, spare the beechen tree!

Thrice twenty summers I have seen
The sky grow bright, the forest green;
And many a wintry wind have stood
In bloomless, fruitless solitude,
Since childhood in my pleasant bower
First spent its sweet and sportive hour,
Since youthful lovers in my shade
Their vows of truth and rapture made;
And on my trunk's surviving frame
Carved many a long-forgotten name.
Oh! by the sighs of gentle sound,
First breathed upon this sacred ground;
By all that Love has whispered here,
Or Beauty heard with ravished ear;
As Love's own altar honour me
Spare, woodman, spare the beechen tree!

A SONG OF THE NIGHTINGALE

The poets have always heard an under-note of sadness in the nightingale's song, and indeed it seems to be tuned to the pensive beauty of the night. This is brought out strongly in the comparison below made with the lark's exultant day-song, by Hartley Coleridge. Hartley was the eldest son of Samuel Taylor Coleridge, a far greater poet. The son, like the father, lived much in the Lake District.

'TIS sweet to hear the merry lark,
That bids a blithe good-morrow;
But sweeter to hark in the twinkling dark
To the soothing song of sorrow.
O nightingale! What doth she ail?
And is she sad or jolly?
For ne'er on earth was a sound of mirth
So like to melancholy.

The merry lark, he soars on high,
No worldly thought o'ertakes him;
He sings aloud to the clear blue sky,
And the daylight that awakes him.
As sweet a lay, as loud, as gay,
The nightingale is trilling;
With feeling bliss no less than his,
Her little heart is thrilling.

Yet ever and anon a sigh
Peers through her lavish mirth;
For the lark's bold song is of the sky,
And hers is of the earth.
By day and night she tunes her lay,
To drive away all sorrow;
But bliss, alas! to-night must pass,
And woe may come to-morrow.

ANSWER TO A CHILD'S QUESTION

Here again we have a great poet, who has thrilled many men and women with his powerful verse, writing the simplest strains for boys and girls. Samuel Taylor Coleridge, author of that wonderful poem, "The Ancient Mariner," is the writer of these lines, which tell us in sweet, simple language that the song of birds is a song of love and joy.

DO you know what the birds say? The sparrow, the dove,
The linnet and thrush say: "I love and I love!"
In the winter they're silent—the wind is so strong;
What it says I don't know, but it sings a loud song.
But green leaves, and blossoms, and sunny warm weather,
And singing, and loving—all come back together;
But the lark is so brimful of gladness and love,
The green fields below him, the blue sky above,
That he sings, and he sings, and for ever sings he—
"I love my love, and my love loves me!"

THE LOSS OF THE ROYAL GEORGE

This poem was written by William Cowper when the news arrived, in September, 1782, that the great warship, the Royal George, had foundered off Spithead on August 29th of that year. Richard Kempenfelt was a brave English admiral, although his ancestors were Swedish. There is the mournful music of a funeral knell in the verses, the whole poem being solemn and dignified.

TOLL for the brave!
The brave that are no more!
All sunk beneath the wave,
Fast by their native shore!

Eight hundred of the brave,
Whose courage well was tried,
Had made the vessel heel,
And laid her on her side.

A land breeze shook the shrouds,
And she was overset;
Down went the Royal George
With all her crew complete.

Toll for the brave!
Brave Kempenfelt is gone;
His last sea fight is fought,
His work of glory done.

It was not in the battle,
No tempest gave the shock;
She sprang no fatal leak,
She ran upon no rock.

His sword was in its sheath,
His fingers held the pen,
When Kempenfelt went down,
With twice four hundred men.

Weigh the vessel up,
Once dreaded by our foes!
And mingle with our cup
The tear that England owes.

Her timbers yet are sound,
And she may float again
Full charged with England's thunder,
And plough the distant main.

But Kempenfelt is gone,
His victories are o'er;
And he and his eight hundred
Shall plough the wave no more.

ROBIN REDBREAST

One thing always to remember about poetry is that it can express the feelings of the heart far better than prose. You will feel this when you read this beautiful poem about Robin Redbreast and the coming of winter, by William Allingham. How surely the poet expresses in warm and friendly words his love for dear Robin Redbreast! So much feeling could not be put into so few words but for the power of poetry.

GOOD-BYE, good-bye to summer!
For summer's nearly done;
The garden smiling faintly,
Cool breezes in the sun;
Our thrushes now are silent,
Our swallows flown away,—
But Robin's here, in coat of brown,
With ruddy breast-knot gay.
Robin, Robin Redbreast,
O Robin dear!
Robin singing sweetly
In the falling of the year.

Bright yellow, red, and orange,
The leaves come down in hosts;
The trees are Indian princes,
But soon they'll turn to ghosts;
The scanty pears and apples
Hang russet on the bough;
It's autumn, autumn, autumn late,
'Twill soon be winter now.
Robin, Robin Redbreast,
O Robin dear!
And welaway! my Robin, Robin,
For pinching days are near.

The fireside for the cricket,
The wheat-stack for the mouse,
When trembling night-winds whistle
And moan all round the house;
The frosty ways like iron,
The branches plumed with snow—
Alas! in winter, dead and dark,
Where can poor Robin go?
Robin, Robin Redbreast,
O Robin dear!
And a crumb of bread for Robin,
His little heart to cheer.

GOOD-NIGHT

These simple verses, which have often been sung by mothers to their children, were written by Jane Taylor.

BABY, baby, lay your head
On your pretty cradle bed;
Shut your eye-peeps, now the day
And the light are gone away;
All the clothes are tuck'd in tight;
Little baby, dear, good-night.

Yes, my darling, well I know
How the bitter wind doth blow;
And the winter's snow and rain
Patter on the window-pane;
But they cannot come in here
To my little baby dear.

For the window shutteth fast,
Till the stormy night is past,
And the curtains warm are spread
Round about her cradle bed;
So till morning shineth bright,
Little baby, dear, good-night.

WHAT THESE PAGES TEACH US

THOSE of us who are building the model town of cardboard will be able to set to work in real earnest with the plans of a row of cottages given on page 484, and will have the satisfaction, when they are finished, of seeing the complete row of cottages shown on page 485. We are told here how to make the queerest-looking dolls of corks and peanuts; and how to make a girl's workbox. We find here, also, more problems and games, and recipes for delicious candies.

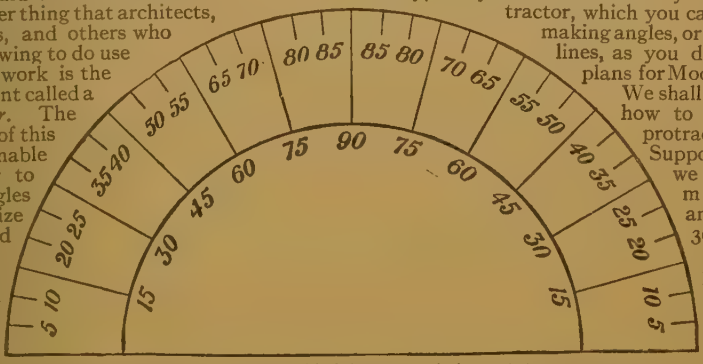
CONTINUED FROM PAGE 388.

PREPARING FOR MODELTOWN

HOW TO DRAW ANGLES AND HOW TO MAKE A TRAY

BEFORE we begin in real earnest to set up the first buildings in Modeltown, which is to grow into a place of great interest as our busy fingers add to it from week to week, we have to know the meaning of "drawing to scale," and we have to make for ourselves a tray on which to do our work. We have already learnt how to use our tools, and we must now lose no time in putting them into use. Drawing to scale is too difficult for young people to do without help, so we have made specially for the BOOK OF KNOWLEDGE a very useful set of rules all on one piece of card, given away with this volume. With the aid of this there should be no difficulty in carrying out our instructions. All will be "as simple as A B C." But, for all that, every young worker must be careful to study the instructions before attempting to use the rules. On the front of the scale rule everything that can be told about how to use these scale rules is clearly stated; so the best thing to do is to study these particulars attentively, and then try to make a tray with the aid of the scale rules.

Another thing that architects, engineers, and others who have drawing to do use in their work is the instrument called a *protractor*. The purpose of this is to enable the user to make angles of any size required easily and accurately. You can make your own protractor if you follow the instructions given and the illustration shown on this page. Take a piece of cardboard and draw upon it the illustration shown above. Do this very exactly and make it neat, with all the lines exact and clear.



The angle measurer for making Modeltown: made in card the same size as this.

Use the compasses to make the half circles and your ruler to make the straight lines. It will do nicely if you make it the exact size of the picture, and put in the figures as shown in the illustration. You will find the work much easier if you trace the picture, which is a very simple thing to do.

Take a piece of tracing-paper, or strong tissue-paper, and place it over the picture. You can see the lines of the illustration through the tracing-paper. Now take a lead pencil with a good sharp point and draw on the tracing-paper the picture beneath, going over each line carefully. When the drawing is complete, take the tracing paper and put it on the cardboard which you are going to use to make the protractor. Now go over the lines again with a sharp pencil, and this will make marks on the cardboard where the lines go. You had better go over these marks with ink, and when you have done this you should have made on the card a drawing similar to the picture on this page. Then you can cut out the drawing neatly, and you will have a handy little protractor, which you can use in making angles, or slanting lines, as you draw the plans for Modeltown.

We shall now see how to use the protractor. Suppose that we wish to make an angle of 30° from a certain point on a line. Put the protractor with the lower, or straight, edge on this line and with the centre point of the protractor—marked by a dot on the straight line—touching the point at which you wish the angle to be. Make a slight mark there. Now look at the outer edge of the protractor—to the right

The working tray for making Modeltown: to be made according to the sizes marked.

or left, according to the direction in which you want the line—and see where it is marked 30. Put a slight mark on the card, or paper, on which you are drawing, at the far end of the line numbered 30. Remove the protractor. Now, if you draw a line between the two marks you have made, from where the centre point touched to where the figure 30 touched, you will have made an angle of 30°.

Degrees are indicated by a small circle after the number, like this —30°.

You will observe that the protractor has two lines marked 30, and that all the other numbers given, except 90, also appear in two different places. This is because you may have to make an angle to the right side or to the left side; but the position of the angle has nothing to do with its size. This will show what is meant.

Each of these angles, or corners, is 30°, although they point to opposite directions. The highest number on the protractor is 90. An angle of 90° is called a right angle; it is one of the corners of a square. If it is more than 90° it is more than a right angle, and is called an *obtuse* angle. If it is less than a right angle it is called an *acute* angle.

Only one other thing is to be explained before setting to work. In the plans we shall print for making cardboard models and other articles, three kinds of lines will be used. To be quite clear, we give examples of them below:

Corners for the tray: to be made 4 times this size.

Solid line means to cut through.

Dotted line is to be half cut through.

Chain line is not to be cut at all.

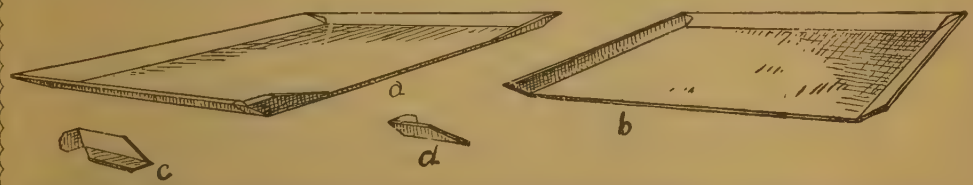
The first is an ordinary solid black line, and whenever we find this line in a plan it means that the cardboard is to be *cut clean through* at that place, and any cardboard detached by the cutting is to be removed. The second is a dotted line, and whenever that kind of line is used in a plan it means that the cardboard is to be *cut half through*. We have to cut half through the dotted lines because we bend *back* the cardboard where they are drawn, and if we did not make a cut the cardboard would crack in bending and leave a rough, ugly edge. The other is a dash-and-dot line (it is called a chain line). Where this line is drawn we *do not cut the cardboard at all*. This chain line is only intended to show us where the windows and doors come and where the chimneys and other things are to be fixed; it is a guide to the places where other parts join on.

These are simple things to bear in mind; and having learned how to use our tools, how to make angles, how to use the scale rules, and what the three kinds of lines mean, we can set to work at once.

A work-tray is a good thing to try our hand on, as it is made in the same way as the cardboard houses, only, of course, it is much easier to make. But it is also very useful. The best kind of tray to make is one with three of the sides turned up and the fourth side left flat, but with corners added to it, as you will see shown quite clearly in the illustrations below. These corners and the turned-up edges will prevent tools falling off the tray, while the flat edge allows the young worker freedom to build up his models on the tray, and to sweep off fragments and dust.

The plan of the tray which we print on page 482 is marked with the sizes to which you ought to make it, and if you follow these sizes you will have no difficulty in making a thoroughly strong and useful tray to work on.

The material we have to get for our tray is called cardboard, and we shall require a piece fifteen inches by twenty-two inches—certainly not less than this, as that is the exact size to which the tray is to be cut. Having got the cardboard and cut it to this size, the next step is to draw upon it in pencil exactly the same plan as we give, and, of course, leaving out the words and figures, which are intended only as guides. On looking at the plan you will notice that two inches along the back and sides are allowed for the turned-up edge. Notice, also, that at the two back corners there are solid black lines, which have to be cut right through. Then at each of these corners there are also dotted lines, and two inches within the back and two inches within the two sides there are again dotted lines. As already explained, these dotted lines indicate that the cardboard is to be cut half through at these places and bent back from the cut. The inner angles at the corners are 300—that is to say, in order to make your plan exact you should make the angle 300, as already explained. Exactly in the middle of the corner a solid line is shown, running from the angle to the outer edge. This is to be cut through entirely, and the cardboard here, where the edges have been turned up, should be made to overlap until the dotted lines have been brought together, and then glued where one edge goes beneath the other. To complete the tray you have only to cut out from any odd piece of cardboard the two corners, of which diagrams are shown. Make these four times the size of the drawings of them and you will find that they will fit the front corners of the tray—one on each side. That is to say, in measuring the drawing you will use scale rule D, and in making your lines on the card you will use your full-sized rule. Cut these pieces half-way through at the dotted lines, and glue the pieces on, one end under the tray and the other on the side of the tray. These instructions, which should be quite clear to you, will enable the young worker to provide himself with a most useful article for the task of modeling on which he is about to engage.



These pictures show (*a*) a complete tray exactly as it should look if you make it according to the instructions, (*b*) a tray before the corners have been added, (*c*) the corner to be glued on the right and (*d*) the left corner.

A ROW OF COTTAGES FOR MODELTOWN

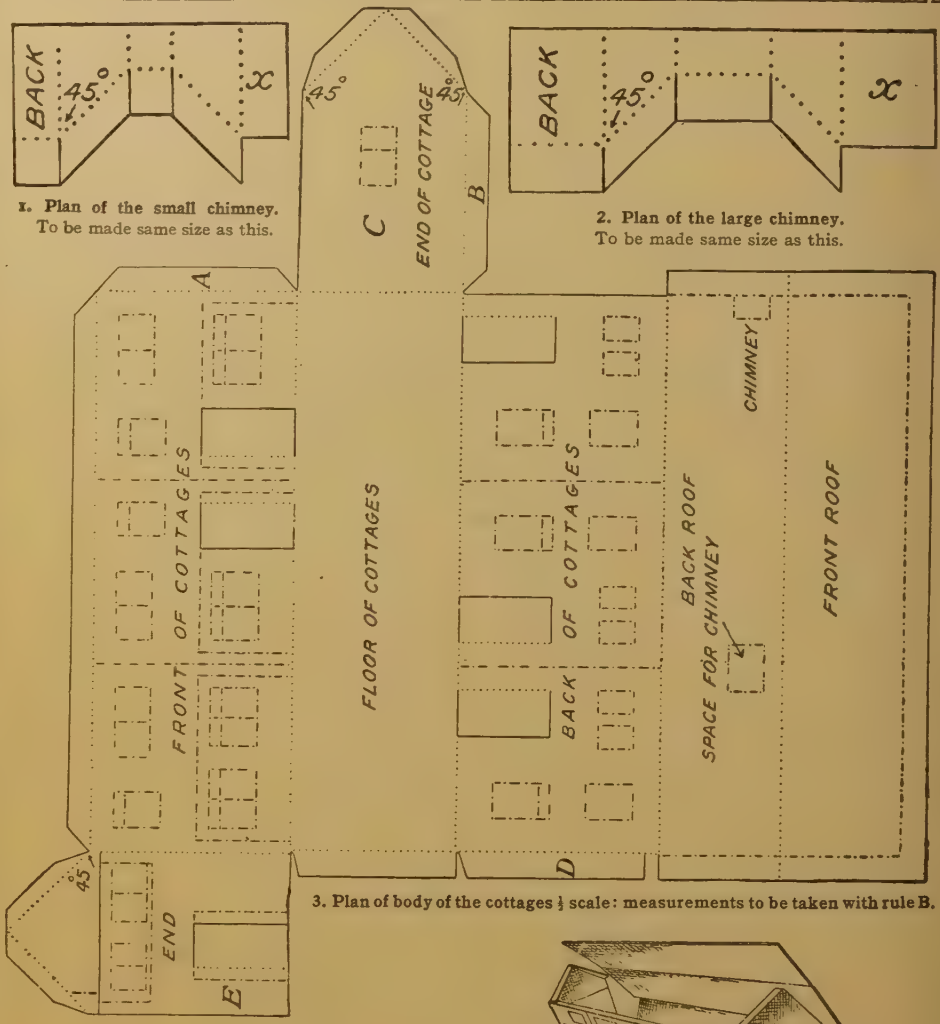
THE WAY TO MAKE THESE CLEARLY DESCRIBED

WE should now be in a position to begin in real earnest the making of Modeltown. Each worker may have his own idea as to where the different buildings ought to go, and for that reason we will not at present lay down plans for the whole of the town, but will rather proceed with the making of the different buildings it ought to contain. The day will come when we shall have to think about setting up a town-hall, a church, and a railway-station; but before all these great works can be undertaken we must suppose that the population of the town is growing, and houses must be provided for the people whom we might suppose to be engaged in putting up the principal buildings if Modeltown were in reality a town of bricks and mortar inhabited by living people. A row of cottages is very necessary, and the next thing ought to be a schoolhouse, which might be used on Sundays for church service. This, at any rate, is a very good start, and many a great town has begun with just a few cottages and a schoolhouse, so that Modeltown need not be ashamed of this small beginning. As the first concern everywhere is a house in which to live, let us at once turn our attention to this neat little row of cottages we are going to erect for the working people of our town. You will see on page 484 that our architect has prepared for us an excellent set of plans, which will enable us to put the building in hand immediately. In picture 4 we have a row of three cottages, two with doors in front and one with its door at the side; but each has also a back door, which is not shown in the same picture. Look carefully at the picture on page 485, for it shows what the result of our work will be like. While you are making

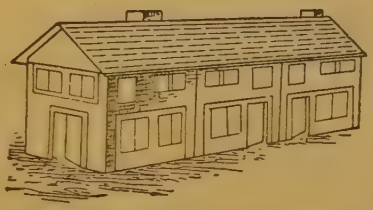
PLANS FOR A ROW OF COTTAGES IN MODELTOWN

1. Plan of the small chimney. To be made same size as this.

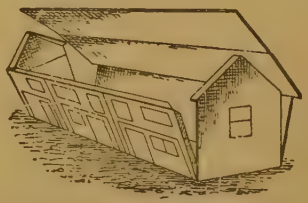
2. Plan of the large chimney. To be made same size as this.



3. Plan of body of the cottages ½ scale: measurements to be taken with rule B.



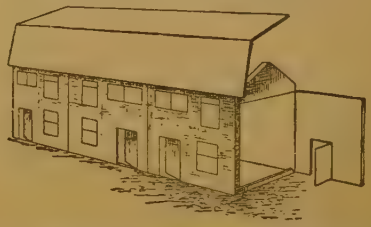
4. Design of the Modeltown cottages.



5. The cottages as they appear before gluing and after the cardboard has been cut and bent up.

7. Chimney before gluing.

8. Chimney after gluing.



6. Cottages when gluing is nearly complete.

this row of cottages, you can compare the work with the picture, and, if you are not doing it quite right, you will perhaps see where you have made a mistake before you have gone too far. Remember that in building houses, as in everything else, a mistake should be put right as soon as ever possible after it has been made.

Now look at the *plan*, as we call the large picture which gives us all the sizes of the card we must cut. It is shown in picture 3. The whole building, except the two chimneys, is cut out of one piece of cardboard. The piece of card that you use must not be less than 10 inches wide and 11 inches long. You will first draw the plan on the card, making it twice as large as the drawing on the page—that is to say, you will measure the lines on the picture with scale rule marked B (the half-scale rule), and you will make your drawing on the card with your full-sized rule. You must remember, also, the meaning of the three kinds of lines—the lines that are black and continuous must be cut quite through with the penknife, the lines that are made of round dots must be cut half through, and the chain lines made up of dots and dashes must be marked on the card only, and not cut at all. You do not require to write or print on the card the words that are in the picture. They are intended merely to serve as guides when you come to fold up the card after it is cut out, and to give you an intelligent interest in what you are doing.

9. The cottages finished and painted.

Make the plan on the card complete before you begin to cut it out. You must be careful to make the angles on the drawing exact, because a very little error at the corner may make a very big error at the other end of the line.

When you cut out the plan, do not use scissors, as they would make uneven edges. Do the cutting with a penknife, being careful to have it sharp, so that you make may clean cuts. Also, be careful not to put your fingers in the way of the point as you are using it. After you have cut through all the black lines, cut the dotted lines half-way through. You may find this a little awkward at first, because it is not easy to put upon the knife just sufficient pressure to cut the card through just the right distance; but a little practice will soon enable you to do this part of the work properly. You will see that it is worth while to do the work neatly.

Now let us suppose that we have got the plan cut out, and all the lines cut half through that require to be treated so. The next thing is to do the bending. The card must be bent over at all the lines that you have cut half-way through. Now you see the reason for cutting half-way through at places. It enables the bends to be easily made and makes straight bends. If you bend a piece of card without having it cut half-way through, you will see how uneven the bend is, and why we must help our bends with half-cuts.

As you bend up the card you will find that it begins to have the shape shown in picture 5. You will find that the narrow strip marked A goes behind the end wall C of the cottages, that the slip marked B fits in behind the back wall, and that D folds up within the other end wall marked E. Now we begin to use the glue. After you have prepared it properly, as already explained, you put just a touch on the different slips that fold behind the walls and hold them a minute, until the slips stick fast to the walls which they touch. Look at the next picture—that marked 6. It shows how our building will look just before the roof has been glued down, and with the end wall left open like a door. If you like, you may leave one end unglued, and thereby allow the end wall to hinge open. This will enable you to look inside the house when you want to, and will allow you to put in furniture if you should desire to do so at a future time.

All that remains now is to make the chimneys and fit them on. Pictures 1 and 2 give the plans of the two chimneys. They will be very easy to make because the size in the book is the actual size; you do not need to use two rules in taking the measurements, but one only, the full-sized one. Indeed, you may trace them if you know how to do this. Having drawn the two chimneys on card, you will cut them out and then glue them up, when the parts marked X will be glued to the other ends. Before gluing they will look like picture 7, and after gluing, and before sticking them to the roof, they will look like picture 8. Then you will glue them to the roof in the right places as marked on the plan, applying glue to all the four turned-up slips at the bottom of the chimneys. This completes our cottage unless you choose to decorate it with a little paint. Red paint on the roof will give us a very neat representation of a row of tiled cottages, or making red walls and painting the roof with a mixture of blue and grey will give us brick cottages with a slate roof. Having made one row of cottages you may make as many more as you like, and the number of cottages in Modeltown will be limited only by your skill.

If you have painted your row of cottages nicely to look like a real little model, it should appear as seen in picture 9, which is made from an actual photograph of a building made as we have described from the plans and instructions given above. It has what looks like a rose tree growing up the side of the end door. This was merely drawn and painted green, but it adds very much to the general effect. The windows also were painted blue to resemble glass, and the roof was colored to look like tiles. In the next lesson we shall see how to make shops, and later we shall learn how to build a villa for Modeltown.

JOHN CHINAMAN MADE OF PEANUTS

JOHN CHINAMAN is one of the oddest-looking men in the world, and we can make the oddest John Chinaman doll that you ever saw out of a simple bag of peanuts, or monkey nuts.

The doll shown on this page is made from eleven peanuts threaded together. By looking at the first picture you will see how the peanuts have been chosen—a large one for the head, two smaller and two larger ones for the body, two more for the upper part of the arms, with a larger one below each to complete them, and two long, curved nuts for lower parts of legs and feet. String them together with strong cotton, as shown in the picture; then draw the face with a black lead pencil or in ink, giving the eyelashes a slanting line to make them look like a Chinaman's.

The nuts strung together

Take three pieces of black wool, and braid them together; this will form the pigtail, which you can stick with glue at the top of the head, or fix by means of the strong cotton used to thread the peanuts. To dress this doll, make a little pair of trousers with two square pieces of bright-colored material; hem each piece on one side, and join half-way at the back; then join the two together and fasten to the doll at the top of the legs.

The smock is made in the shape of a little sack, simply drawn in at the neck. Two very wide sleeves are next made, each one like a small bag, sewn on the smock quite close to the neck. When choosing the materials for these Chinaman dolls it is better to secure bright reds, blues, and yellows, as these give the prettiest effects.

John Chinaman dressed

The hat looks very nice made out of two round pieces of cardboard, covered with silk, and joined together with a little silk cord overstitched all round. It is kept in place with a colored glass-headed pin stuck right through the head.

The black lines seen on the smock can either be made by putting a little braid round the bottom and at the edge of the sleeves, or by working on it some fancy feather-stitching. If you will paint in the shoes with a little black paint or china ink it will give John a good "finish."

A LITTLE DUTCH FAMILY MADE OF CORK

THE quaint little woman in the picture comes from Dutchland, and is made out of cork. I feel quite sure if you have ever heard the "pop" of a champagne bottle you never thought of asking for the cork! Just see what we can do with it.

The whole body and cape of Mrs. Dutchwoman is one solid champagne cork, which has just been carved out a little with a penknife to form the outline of the cape, this carving being often unnecessary, as the lines are already shaped by the wire which holds the champagne cork to the bottle.

For the head we must take a smaller cork; one out of a medicine bottle will do beautifully. Shape it round with a penknife, and stick it to the body by putting a piece of matchwood in the body and the head on the top. A pin will answer the same purpose. Frayed string or silk will do for the hair, which is glued on the head.

A mark with a black pencil or a pen and ink will make the eyelashes and nose. Use a blue pencil for the eyes and a red one for the nose and mouth. Two little pieces of matchwood stuck at the side will do duty for the hands, and two underneath will make the feet. These should be stuck in a flat pickle-jar cork, which makes a good stand for the little Dutchwoman, who will look quite charming with a muslin and lace apron fixed on with two pins under the upper part of the cork.

The little Dutch family made out of ordinary corks

The little basket which she holds in her left hand is made out of a pecan, neatly carved in two semicircles to shape. The nut is, of course, taken out to leave the basket hollow.

Mr. Dutchman is made of exactly the same material, the champagne cork being used upside down. The outlines of the coat and waistcoat are shaped with a penknife. Buttons may be put on the waistcoat by ordinary short pins pushed in the cork. The little arms are cut out in cork, or, what is more simple, made of the little twigs of a tree, fixed on to the body with pins, being thus movable. The legs and wooden boots are also cut out of cork, the head and face being treated in the same way as the Dutchwoman's.

The head is formed of a rounded medicine-bottle cork. A circular piece of cardboard is cut out for the brim of the hat, and the top of the head, which comes through the cardboard, is painted the same color as the hat, and has a tiny ribbon tied round to make it look like the crown.

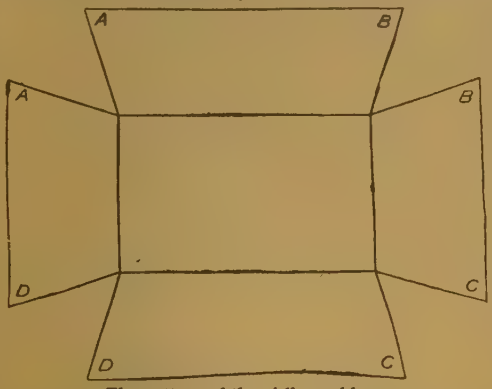
The stick is made from a colored match from which the top has been cut off.

The baby boy is made from an ordinary wine-bottle cork, put upside down. Two matches make the legs, which are stuck on a flat, circular piece of cork to make the little boy stand. The two arms are also made from bent matches. The hat is made in the way that has already been described.

HOW TO MAKE A GIRL'S WORKBOX

HAVE you ever thought of the joy it brings to have a real workbox of your own? Let us try to learn to make a box like the one in the picture.

Take a piece of cardboard thick enough to make a firm foundation, and on this trace the



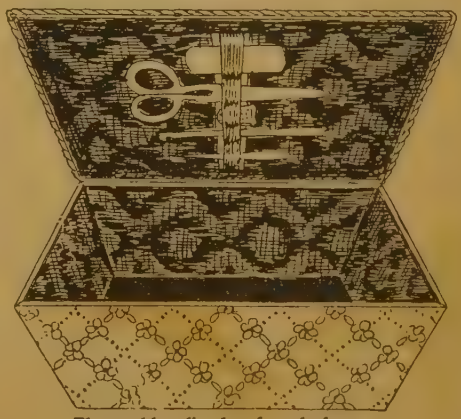
The pattern of the girl's workbox

lines above. Cut the cardboard all round the outlines of the diagram. Bend the four pieces which are intended to form the four sides. Do this while following the lines carefully, so that the bottom of the box will be quite even. Straighten the cardboard again, and cut two pieces of cretonne, each one covering entirely the piece of cardboard which includes the bottom and sides of the workbox. Cut the material about a quarter of an inch bigger all round than the cardboard, to allow for turning in the edges, which otherwise would fray and look untidy; then glue the cretonne on the cardboard, back and front. When this is done, let it dry for one day.

The next thing to do is to bend your covered cardboard again, just as you did before. This will be quite easy now, for, although you cannot see the lines, the cardboard will bend naturally and without any difficulty in the same place. Join the corners A together by sewing the cretonne on the two sides with over-and-over stitches, using a needle with strong thread to secure the corners, top and bottom, very firmly. The same thing must be repeated in the corners marked B, C, D.

The workbox now stands, and is covered and lined. Some cord sewn round the foot of the box will make a neat finish and slightly raise the box. Now the cover must be made, and this is the most interesting part of the work. Cut a piece of cardboard to fit exactly the top of your workbox; then, before putting on the cretonne as you have done on the other part, put a layer of cotton-wool to form padding, and cover it over with the material. Do this on both sides of the cardboard, taking great care to turn the edges in, as described for the other part of the box, before gluing the cretonne down. A strip of material is fixed on the inside of the lid, and sewn at regular intervals, to receive a thimble, a pair of scissors, crotchet needle, and other things. The cover is then put on the box part by slipping two small pieces of cretonne under both cover and back of box, one on each side, to form hinges. These are then sewn very firmly, so that the lid can be opened and closed without getting torn or unstitched.

A silk cord running all round the top will



The workbox lined and ready for use

hide the joining of the cretonne, back and front, and can be sewn with light, long stitches, tacking the cretonne on both sides, thus making the edge of the box quite firm and neat.

HOW TO REMOVE STAINS

DID you ever get a grass stain on your "bestest" dress and wonder what to do? Or did you ever find a spot of ink or paint on your shirt-waist and have to hunt everywhere for a remedy? Every girl ought to know how to remove spots that are likely to appear. Here will be given suggestions that may be followed in case you want to know how to remove a stain.

It is always best to attack stains as soon as possible after they are made, and always before they are laundered. Never use hard water or strong acids. Before trying to remove them, first find out the nature of the stain. The remedy that will remove one kind of stain might set another kind. Warm water and soap will generally remove any grease stain, but will often set a fruit spot. Boiling water is a safe remedy for nearly every variety of stains, and rarely sets a stain. Water is one of the best remedies, and does not injure the material, whereas chemicals may hurt the fabric. If a chemical must be used, remember to rinse the material in plenty of clear water. If an alkali like lime is used to remove stains, then an acid like vinegar or lemon-juice should be put on the spots. Several different remedies will be given for each stain, so that you will surely find the material for one of the suggestions right in the house.

GRASS STAINS

IF a white dress is injured by a grass stain, use a little clear ammonia, but do not use it on colored goods. Wash the ammonia out with plenty of clear water and soap. For colored goods, rub a little lard on the stain, and wash it out with soap and water, and you will be surprised how quickly it disappears. Another remedy is kerosene. Saturate thoroughly with kerosene, and then wash carefully. Still another suggestion is cream of tartar, which may be moistened and rubbed on the stain. Pure alcohol is often recommended, and molasses is said to be a good remedy, if it is well rubbed into the stain.

PAINT AND VARNISH STAINS

A SPLASH of paint spells ruin to a pretty dress unless you know what to do for it. As soon as you have such a misfortune, rush for the bottle of turpentine. This will be effective on a fresh paint stain. If the stain has been allowed to stand, first scrape off the surface with a knife, then apply a little vaseline to soften the paint, and then use the turpentine. While the paint is fresh, you may find that rubbing with a piece of cheesecloth or some material like the dress will cause the stain to disappear. Use alcohol on fine and delicate material, and use turpentine on the coarser goods.

For varnish on a dainty white dress, first try rubbing it with alcohol, and then saturate it in turpentine. A little chloroform will remove any trace of discoloration that may remain.

If the paint has been allowed to dry on the material, there is still hope for its removal. Take a little ammonia and an equal amount of turpentine, and apply it to the spot. Wash it out afterwards, and saturate the spot again. If you do this several times the spot will gradually disappear.

SCORCHED SPOTS

ISN'T it aggravating to have a shirt-waist come back from the laundry with an ugly yellow scorched spot just where it shows most! Rub the spot with moistened Ivory soap, and put the garment in a sunny window. Sometimes the yellow discoloration will disappear if the dress is simply placed in the sun to bleach. A thin mixture of starch and water may hasten its removal.

IRON RUST

IF we are so unfortunate as to find a number of iron rust spots on a handkerchief or dress, do not worry about the stains, for they are easy to remove. Simply get a little cream of tartar and rub it on the spots, letting it remain for an hour or more. Then wash the place, and if the spot has not quite vanished, rub again with the cream of tartar. On colored goods or wool, a special application of citric acid solution will remove the trouble. Muriatic acid or oxalic acid may be used if we take great care, and apply it very sparingly, just touching the spots. Salts of lemon is also good if the spot is small.

IODINE

IODINE is often used as a remedy for cuts, sprains and bruises, and as a result sometimes our fingers get an ugly spot or two. Iodine stains may be removed from the fingers or from material if we apply pure alcohol and then use lukewarm water and plenty of soapsuds.

CHOCOLATE STAINS

A STAIN from chocolate demands a different treatment. Cold water removes, while warm water sets a stain of this kind. Sprinkle the spot with a little powdered borax, and then soak it in cold water for fifteen minutes. This loosens the chocolate from the linen fibres, and it will soon dissolve if rubbed gently. If discoloration still remains, pour boiling water over the spot.

ACID STAINS

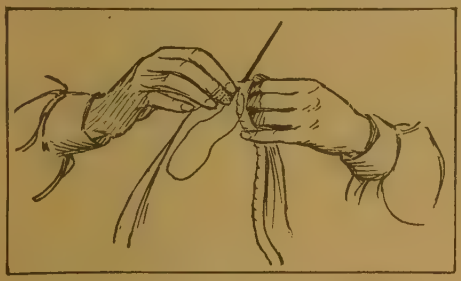
IF any common acid like lemon-juice or vinegar is spilled on a dress, it may change the color. If you sponge the spot lightly with a little ammonia in some water (one tablespoon of ammonia to four of cold water) you may restore the color.

WHAT TO DO WITH A GIRL'S WORK BASKET

I. HOW TO USE THE NEEDLE

ON page 487 we are told how to make a workbox of our own, and we are here to be shown the right way to use it. We are going to dress a doll. We shall cut out the clothes all by ourselves, and make them as our own clothes are made. First we shall make the little underclothes, one by one, and then the frock. But before we can do anything at all we must know how the different stitches holding the pieces together are made.

We all think that it is the easiest thing in the world to thread a needle, but the right way to do it is to thread it by the end just cut off the reel, making a tiny knot at the other end. If the thread is put through the needle at the opposite end all the gloss goes out, the thread



1. How to hold the material for stitching

becomes woolly, knots, and breaks off very easily. Always choose a needle that is just a little thicker than the thread. This will open the material enough for the thread to come through without any unnecessary pulling and tugging.

Now, if you want to know exactly how to hold the hands to do some good work, look at the picture [1]. You will see that the left hand holds the piece of material between the thumb and first finger, letting it fall loosely over the back of the hand, the little finger just holding it in place. The right hand holds the needle and pushes it in and out of the material, a thimble on the third finger helping to push the needle through. The picture shows the hands in position when doing a hem—which is, as we all know, a double fold of material, turned down and folded over to protect a raw edge. The width of the first fold of a hem should be about one-third the width of the hem required, but in very narrow hems the first fold is the same width as the second. If, however, you intend to sew very fine material, such as muslin, the fold must be the same size as the hem, otherwise the rough edge will show through.

When you have decided what the size of the hem should be, turn the double fold and press it down firmly with your nail, then tack it, with long, even stitches. This will save a lot of time, for the hem will keep pressed down in position, and it will help to get the work straight and even. The needle is then put in the material, as you can plainly see in the next picture [2], the stitches being done from right to left in a slanting position.

There are many different kinds of stitches, but for our present purpose it is only necessary to know a few of them. The running stitch [3] is one of the most useful to learn, for it is with this stitch that seams are made and materials gathered.

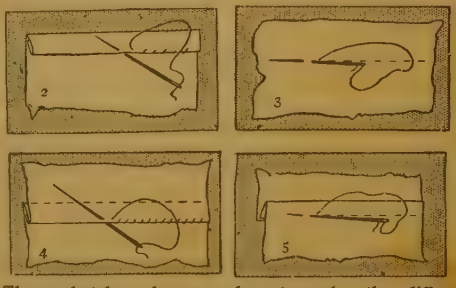
If you are anxious to learn how to do really beautiful sewing, try first on fine canvas, or on any other very coarse material, where the threads can be easily seen, taking two threads on the needle and going over two. You will be surprized to find how easily the hand and eyes will be trained to work evenly and regularly, until you can work quite pretty little stitches on any material without counting the threads, which is always a slow and tedious method of working.

When you can do the hemming and running stitches quite evenly, you have mastered the most difficult part of sewing, for all the other stitches are more or less made from these two.

If you look at picture 4, for example, you will see a little pattern of running and felling, which always looks full of difficulties to little girls, although it is simply running and hemming. Two pieces of material are put close together, the back piece slightly overlapping at the top to allow for the folding over of the raw edge, and joined together, on the wrong side, by running stitches. The material is then opened under the seam, laid flat, and the two edges folded over like an ordinary hem.

A glance at the picture will show the work far better than it can be explained.

The easiest way for little girls to do running and felling is by French seams. It will probably be the most popular way of doing the seams in dolly's underclothes. If you look at the picture [5] you will see that this kind of seam is simply a double row of running stitches. The first row is done in the ordinary way, then the raw edges are cut as short as possible, and the seam turned inside out,



These sketches show you how to make the different stitches. 2 is a hemming stitch, 3 running, 4 running and felling, and 5 a French seam.

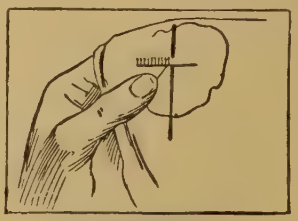
a second row of stitching giving perfect neatness in the finished work. You must, however, remember when doing these seams

that the first row of running, instead of being done on the wrong side, as for running and felling, is always done on the right side, the second row putting the first one out of sight.

Gathering is done with exactly the same stitches as running, only it must be done with strong cotton so that it will not break. The thread is pulled to gather the fulness. No knots or joins must be allowed in the thread, or it will not come through the material to form the gathers. Measure the piece of stuff you want to gather, and take a long enough piece of thread to leave two or three inches to take hold of when you want to draw it. It is always better to do two or three rows of gathers in case one should break, besides giving more evenness and regularity to the gathers.

If the gathers are done on calico, or any other fine material for underclothes, when the thread has been drawn, a thick needle should be used to stroke down the material between each gather.

Buttonhole stitches come next, and these are by no means too difficult to be attempted. They are really quite easy when you know the way. Try first on a piece of canvas or coarse flannel, and make very even and regular stitches quite close to each other. The picture [6] shows just how the stitches are made. Let the thread go under the point of the needle and pull the needle down gently, letting the thread cross over itself where the needle came out. If you follow those directions, and look at the picture, you will really be surprized how easy the stitch is. It is not only useful for buttonholes, but for embroidering flannel petticoats, as we shall see later.



6. Buttonhole stitches

GENERAL WAXVESTAS AND HIS FAMILY

THE general and his children in the illustration below are simply made of wax matches which have had their tops burnt off. Let us look at the general first. A glance at the picture [3] will show how he is made. The match which forms the body has been pulled apart at the top to form the hair. The head is made of a little ball of sealing-wax. Two more matches are warmed at the ends (to make the wax sticky) and stuck on the body for the arms, and another one is fixed to the end of one arm to form the sword. The legs are fastened in the same way, but they are bent a little at the knees, and the scabbard is also fixed on by warming the wax. If this is well done and properly arranged, it will make a support for the little man, who will then stand by himself. The eyes, nose, and mouth must be drawn in with a pen.

The little girl who is running away from the fierce-looking general is made in the same way, but, of course, the matches have to be bent differently; the picture [2] shows us how. Here one bent match does duty for both arms, but to make them look alike the tops must be cut off. To make the skirt, make some red sealing-wax warm and stick it to the wax matches, bending it with the fingers to make the shape. The umbrella shown in the picture is also made of sealing-wax, made warm, shaped and stuck on the wooden match, which has been cut in half and pointed at one end. Fix the umbrella to the girl's hand by warming the wax match which makes the arm, and sticking the two together.

The little girl's brother, who also seems afraid of the general, is very easy to make, and a glance at the picture [1] shows how to bend the matches. A wooden match, cut in half, and pointed at one end, forms the walking-stick.

The heads must be very carefully modeled. Make them as you made the general's, with a little ball of sealing-wax, but in this case, as you have a side view of them, the wax must be pinched with the fingers and nail to make the nose, mouth, and chin. With a little practice this becomes quite easy.

General Waxvestas and his family, made of wax matches and sealing-wax

LITTLE PROBLEMS FOR CLEVER PEOPLE

THE problems before these are on pages 110 and 256, and the answers below refer to those on page 256.

WHEN DID ALFRED REACH SCHOOL?

19. Alfred had a fairly long walk to school every morning. When he got as far as the church he had walked one quarter of the way, and it was usually half-past eight on the church clock when he passed it. When at the railway-station he had walked one-third of the way, and it was usually twenty-five minutes to nine on the station clock when he passed it.

At what time did he usually reach school?

WHEN WAS THE WATCH RIGHT?

20. At noon on Monday Herbert asked his father what o'clock it was. His father told him that it was noon, and said that his watch was two minutes fast. On Wednesday morning Herbert again asked the time, and his father replied that the exact time was eight o'clock, but added that his watch was one minute slow. Herbert then told his father at what time his watch had been exactly right. Could you have done it?

WHAT VEHICLES WERE SENT?

21. An order had been received at the livery stables for carriages for a party of fifty-nine. The manager had carryalls to seat nine and taxi-cabs to hold four, and he sent some of each, so that everyone had a seat and there was no seat vacant.

How did he do it?

THE HARE AND THE HOUND.

22. A hare was sixty of her own leaps in front of a greyhound, and took three leaps while the hound took two; but the hound went as far in three leaps as the hare did in seven. In how many leaps did the greyhound catch the hare?

HOW WAS THE FRUIT DIVIDED?

23. "Cocoa-nuts are 8 cents each, oranges 1 cent, and apples one-half cent," said the fruiterer. "I have just 40 cents," said the customer, "please make me up twenty." How many of each did she get?

HOW DID THE SHEEP STAND?

24. "I saw an odd sight the other day," said Brown. "Two sheep were standing in a field, one looking due north and the other due south. How do you think that each could see the other without turning round?"

Can you give the answer?

HOW MANY SEATS IN THE HALL?

25. "Is there a good audience?" asked the lecturer. "Only one-third of the seats are filled," he was told; "but I think we should have filled the hall if the tickets had been 25 cents instead of 50 cents, and in that case we should have had $50 more."

How many seats were there?

WHAT WAS THE MIXTURE?

26. "Coffee is 32 cents a pound and chicory 8 cents a pound," said the grocer. "Then mix me a pound for 23 cents," said the lady. In what proportion did the grocer mix the two?

HOW LONG DID HE WAIT?

27. "You have missed the train by a minute," said the stationmaster, "but there is a train every few minutes." "If there were three more trains an hour," said the traveler, "and I had just lost a train by a minute, I should have a minute less to wait for the next." How long had he to wait?

HOW MANY WORDS WERE SENT?

28. "This is cheap," said Mr. Jones, as he paid for a telegram from London to Glasgow; "it is three times as long as the telegram I sent yesterday and it costs only twice as much." How long was the telegram?

HOW WAS THE FERRY CROSSED?

29. Fred and Albert, with their father and the village postman, stood at the ferry, waiting to cross. Fred and Albert each weighed 8 st. and their father and the postman each weighed 16 st. But the boat could carry only 16 st. at once.

How did they cross?

THE ANSWERS TO THE PROBLEMS ON PAGE 256

14. The clock would take sixty-six seconds to strike twelve. Berween the first stroke and the sixth stroke there were five intervals of time, each interval being six seconds. Between the first and the twelfth stroke there were eleven intervals of time, each of six seconds, so that the clock would take sixty-six seconds to strike twelve.

15. He filled the three-quart jug from the milkman's can, and then poured it into the five-quart jug. He filled the three-quart jug again from the milkman's can, and from it filled up the five-quart jug, leaving one quart in the three-quart jug. Now he emptied the five-quart jug back into the milkman's can, and poured the one quart in the three-quart jug into the five-quart jug. Then, by filling up the three-quart jug from the milkman's can again, and adding it to the one quart in the five-quart jug, he had the four quarts required.

16. Four eggs. One hen would lay one egg in a day and a half—that is, two eggs in three days, or four eggs in six days.

17. The last boy took the basket as well as the egg that it contained.

18. As the tramp runs round the stack in forty seconds, and the farmer in thirty seconds, the farmer can run round four times in the same time that the tramp takes to run round three times. This means that in four rounds run by the farmer he would gain one round upon the tramp; but, as the tramp had a start of only a half a round, the farmer would overtake him after running only two rounds, which is the answer.

THE NEXT THINGS TO MAKE AND TO DO BEGIN ON PAGE 615.

THE PILGRIMS AT THE TABARD INN

In olden days, when England was a Roman Catholic country, there were many places to which pilgrims went to visit the shrines of saints. Chaucer, the first great English poet, wrote a book of "Canterbury Tales" which were supposed to be told by a party of pilgrims on their way to Canterbury to visit the shrine of St. Thomas à Becket. In the top picture we see the mixed party at the Tabard Inn, at Southwark, and at the bottom most of them are mounted and on the way, one of them telling his story, for it had been agreed that, in order to pass the time pleasantly, each one would tell a story on the way to Canterbury, and another on the way back. Some of these stories are re-told in the following pages.

CHAUCER'S CANTERBURY TALES

THE most famous of the writings of Geoffrey Chaucer, the first great English poet, is the work known as "The Canterbury Tales." Its plan is simple. We are to imagine a company of "pilgrims"—which did not mean religious people, but good and bad alike—setting out from the Tabard Inn, at Southwark, in April, 1387, some on horse and some on foot, to visit the shrine of St. Thomas à Becket, at Canterbury. The landlord of the inn proposes that each pilgrim, to pass the time, shall tell a story on the way to Canterbury, and another on the way back. As there are thirty-three people in the company, including Chaucer himself, that would mean sixty-six tales, but the poet only wrote twenty-four. Though the book is incomplete, it is longer than the "Iliad." Seven of the stories have been chosen for re-telling here. Our language has changed so much since Chaucer's time that many words have to be altered, and some syllables have to be pronounced which are not sounded now. In our quotations these are marked with accents, like "called."

THE PATIENCE OF GRISELDA

THE TALE TOLD BY THE CLERK

CONTINUED FROM 450

A "CLERK" in Chaucer's time meant a student, or any learned person. We still speak of a clergyman as a "Clerk in Holy Orders." This is the story told by the student to his fellow-pilgrims.

A gifted but pleasure-loving nobleman named Walter, lord of the noble country of Saluces, in Italy, was asked by his subjects to marry, so that an heir might be left to them when he had gone. Near by his palace was a little village, which the marquis passed through when he went hunting.

Among the poor folk of this village dwelt a man called Janicula, who had a daughter, "the fairest under the sun." This humble maiden, whose name was Griselda, was as virtuous and dutiful and hard-working as she was beautiful. Often, when on his way to the chase, had the marquis's eye rested on Griselda, and, bearing in mind his people's wish, he determined that if he did marry she should be his wife.

He had fixed a day for his wedding, as his people had desired, but the day came and still none knew who was to be the bride.

All preparations were made for the ceremony. Costly dresses were made, gems prepared for his lady that was to be, and a gallant company were invited to the feast. Then a brave procession, headed by the marquis, set out from the palace to escort the bride.

The marquis led the way to the little village. Here Griselda was busily engaged getting her household tasks done, so that she might afterwards stand at her father's door and see the wedding procession. As she was setting out to draw water at the well, the marquis stopped the procession at her rude dwelling, and, calling her by name, at which she almost swooned, asked for her father. Griselda answered that he was within, and then brought him forward. After conferring with her father, the marquis asked Griselda if she would marry him, giving him all obedience. Griselda pleaded her unworthiness of so much honor, but replied that if it were her lord's will she would marry him and obey him in all things. Then the marquis, taking her hand, led her forth from the hut, and said to his people, "This is my wife. Honor and love her as you love me."

Griselda was straightway dressed in royal robes, and, looking more lovely than ever, was set on a beautiful horse, on which she rode to the castle, where the marriage was celebrated with much feasting.

Walter and she then lived for a time in great happiness, Griselda winning all hearts near and renown afar. Then was Walter moved to try her obedience sorely. When a little daughter was born to them he told her that his people were displeased, and that she

was the cause of the trouble. Obedient to her husband's wish, Griselda gave up her child, thinking she would never see it any more. So, when a son was born, him also she gave up. Then the marquis, chiding her with her lowly origin, though her conduct was such that one born and reared to fill a great position might have been proud of it, said that she must return to her father to make way for another whom he was to marry. In this, as in all other things, was Griselda submissive.

The people, who loved her, were angry at the marquis's cruelty. But when the new bride came in state with her brother from Bologna, and the people saw that she was fairer and younger than Griselda, they, with the fickle hearts of the crowd, thought that the marquis had done well.

Yet was Griselda to be further tried, for the marquis sent for her to greet the new arrivals, because she alone knew how such ceremony should be carried out. So in her humble attire Griselda went back to the castle to obey her cruel lord's behest. And all the guests wondered who this humble and beautiful lady was that knew such honor and such reverence. At last, when the feast was spread, the marquis called for Griselda, and, as if in jest, asked her how she liked his new wife.

"Right well, my lord," quoth she; "for in good fay,
A fairer saw I never none than she.
I pray to God give her prosperity;
And so hope I, that He will to you send
Pleasaunce enough unto your life's end.
One thing warn I you, and beseech also,
Hurté not ever with no tormenting
This tender maiden, as ye have done me;
For she is fostered in her nourishing,
More tenderly, and to my supposing
She could not adversity endure
As could a pooré fostered créature."

And when Walter saw her patience under this great trial, his heart was at length touched.

"'Tis enough, Griselda!" he cried. "Be no more afraid. Now know I, dear wife, your steadfastness." He took her in his arms, and sought to comfort her, so overcome was she at what he said. He told her that it was her own daughter whom she had just received as his new bride, and that the boy was her son. He had sent the two to Bologna, where they had been fittingly cared for and brought up secretly. Griselda was then dressed in the royal robes; there was great rejoicing, and the rest of her life was full of happiness. Says the poet:

Full many a year in high prosperity
Lived these two in concord and in rest,
And richly his daughter married he
Unto a lord, one of the worthiest
Of all Italy; and then in peace and rest
His wife's father in his court he keepeth,
Till that the soul out of his body creepeth.
His son succeedeth in his heritage,
In rest and peace after his father's day;
And fortunate was eke in marriage,
Though he put not his wife in such a say.
This world is not so strong, no, by my fay,
As it hath been, in oldé timés yore,
And hearken what this author saith therefore.
This story is said, not for that wivés should
Follow Griselda in her humility,
For this could not be borne, no, tho' they would;
But for that every wight in his degree
Shouldé be constant in adversity
As was Griselda.

THE FOX REPAID IN HIS OWN COIN

THE TALE TOLD BY THE PRIEST

THERE was once a poor widow, in the little yard attached to whose dwelling was a very fine cock, called Chanticleer One morning this bird awoke with terror and told his mate, Pertelot, of a horrible dream that he had had, of a beast like a hound that threatened him. Dame Pertelot laughed her Chanticleer's fears to scorn. It was, said she, the result of indigestion, for which she suggested that he should take certain medicines.

While Chanticleer was enumerating stories of dreams that had come true, he looked upon Dame Pertelot's face, and, taking courage, begged that they should talk of cheerful things. By this time daylight had come, and, descending from his perch, Chanticleer strutted around like a lion, chuckling whenever he found a corn.

But one day, as he was proudly walking about the yard, crowing at the sun, he spied a fox that had crept in the night before and hidden in a bed of herbs. Then Chanticleer, reminded of his dream, would have fled, but the fox, addressing him, said:

"Gentle sir, alas! why would ye go? Be not afraid of me. I am your friend.

I only came to hear you sing, for, truly to you as sweet a voice is given as any angel hath that is in heaven. Your father and your mother both have been in my house. I never heard anyone except you sing so well as your father did. Let us hear now if you can imitate your father."

Chanticleer, much flattered by the remarks of the sly fox, stood high upon his toes, stretched his neck, made his eyes to close, and began to crow right loudly. Then Dan Russel, the fox, jumping up, seized him by the throat, and fled with him towards the wood.

Such an alarm was then raised by Dame Pertelot and the other hens that the widow and her daughters ran out of their dwelling and, seeing how matters stood, called the neighbours, who joined in the chase. Jack Straw and all his company never made such a to-do as was caused by the chase after the fox and Chanticleer. But as he was lying helpless in fear on the fox's back the cock thought of a plan.

"Dear sir," said he to his captor, "if I were you I would turn on yon proud fellows and tell them that, now I am near the wood, the cock shall here abide, and I will surely eat him, when I choose, whatever you may do."

"In faith," declared the fox, "it shall be done."

But as he spoke the cock slipped from his mouth and quickly flew high up on a tree out of reach. The fox then cried that he was sorry for frightening the cock. He did it, he said, with no base intent; and if Chanticleer would only come down again he would tell him why he had acted as he had done.

But Chanticleer replied that he had been deceived once and would not be deceived again. And so the fox was paid in his own coin—flattery.

THE STRANGE ADVENTURES OF A PRINCESS

THE TALE TOLD BY THE LAWYER

CONSTANCE, the daughter of the Emperor of Rome, was of such goodness and beauty that, when travelers returned from that city, they could not sing her praises too highly. The Sultan of Syria heard of her from his merchants, and was so affected by their reports that he sent word to her father offering to become Christian, with all his nobles, if he might have her hand in marriage.

The marriage took place; but the Sultan's mother, who was secretly opposed to the union, invited the bride and bridegroom, and all the Christian knights who accompanied them from Rome, to a great feast, at which she caused them to be treacherously murdered, all save Constance. Her she sent adrift to sea in a rudderless boat, with all the rich wedding gifts and a store of food and raiment.

In this frail bark Constance was driven far, and finally cast on the shores of Northumberland. Here she was found by the constable of a castle which stood near, and he and his wife, Hermyngyld, befriended her and became Christians.

A young knight of Northumberland, being refused by Constance, sought to bring her to a shameful death. He killed Hermyngyld secretly and accused Constance of the crime. She was tried before King Alla of Northumberland, whose gentle heart was touched with pity by her tears. A miracle occurred which was thought to prove her innocence; so the false knight was put to death, and she became King Alla's wife.

But Alla had a mother, who was bitterly opposed to this marriage, and in her son's absence had Constance once more sent adrift with her baby boy. When King Alla discovered this, he killed his wicked mother with his own hand, and gave himself up to grief and lamentation. Meanwhile, Constance and the little Maurice were rescued from a heathen land on which they had been cast, and eventually taken to Rome, where they were befriended by a senator and his wife.

All this time Constance kept her pitiful story to herself, but her goodness caused her to be beloved by all.

Then King Alla, smitten with repentance for the death of his mother, journeyed on a pilgrimage to Rome, where he was received by the very senator who had befriended Constance; and, being invited to a feast by Alla, the senator took young Maurice with him.

Attracted by the child's face, Alla asked as to the boy's history. Musing

on all that the senator could tell him, and full of thoughts of the wife he mourned as one that was dead, Alla afterwards went as a guest to the senator's house. Here Alla and Constance met, and knew one another immediately. Constance, who thought it was by Alla's orders she had been cast adrift, sank down in a swoon. Then the truth became known to her concerning the treachery of King Alla's mother; and, husband and wife being reconciled, Constance made herself known to her father, the Emperor; so at last all were come to happiness.

Alla shortly after took his wife back to England. But only a little while in joy and pleasure lived Alla and his Constance before Alla died.

Constance then returned, for the last time, to Rome, where Maurice was made Emperor in course of years; and the remainder of her days were passed in acts of virtue and charity.

THE MEN WHO WENT TO KILL DEATH

THE TALE TOLD BY THE PARDONER

IN those days there were men who were permitted to grant to others, in the name of the Pope, "pardons" for their sins. Such a pardon was known as a "Papal indulgence." The men who dealt in them were called "Pardoners." Here is the story told by the Pardoner whom Chaucer includes among his pilgrim group:

In Flanders lived a company of young revelers who practised all forms of folly and wickedness. Three of these ne'er-do-wells were one day seated in a tavern drinking, when a bell was heard tolling for a man who was dead. One thereupon called out to his servant to get for them the name of the dead man. The varlet replied that he had no need to go out to learn who it was that was dead.

"It was," said he, "told me two hours before you came here. The dead man was an old comrade of yours, and he was slain at night, as he sat on his bench drinking, by a silent thief men call Death, who hath killed a thousand of pestilence in this country."

The lad's story was confirmed by the taverner, who added that Death had that year slain many men, women, and children, peasants and pages, in a great village within a mile away.

At this one of the roysterers invited his fellows to join with him that they might seek out Death and slay him. And the three set out on their errand towards the village spoken of. On their way they met an old man, who besought their mercy.

"Nay, old churl," said they, "tell us where this same Death is, that killeth all our friends, or thou shalt die."

"Now, sirs," replied the old man, "if thou art so eager to find Death, turn up this crooked way, and you will find him in yonder grove beneath an oak-tree, where I left him."

On learning this the three young men ran in the direction indicated, and, coming to the tree, found a great store of golden florins piled up. No longer did they think of their quest of Death, but forthwith sat down by the precious hoard.

"Fortune," said the youngest of the three, "has given us this treasure that we may live in mirth and jollity. It must be carried home to my house or to yours by night, because if men saw us with it in the daytime we should be hanged for carrying what is our own."

He proposed that they should draw lots to decide which of them should go to the town for food and wine, while the other two kept watch over the treasure. The lot fell on the speaker. When he had departed, one of the others said to his companion that it would be much better if the gold were divided only between two of them.

"Two of us are stronger than one," said he, "and when our companion returns do you engage him, as it were, in a playful wrestling bout, when I will strike him with my dagger, and if you despatch him with yours, then all this gold shall be ours to gratify all our wishes and enable us to play at dice as much as we like." The second villain agreed to this dastardly plan. But wicked thoughts entered also the mind of the youngest as he went towards the town, and, thinking how he could gain the gold for himself, he bethought him

of the apothecary's, where, on the pretext that he wanted to kill rats, he bought some powerful poison. Next he borrowed three bottles, into two of which he poured the poison. Filling then the bottles with wine, he returned to his companions, to whom he purposed giving the poisoned wine, drinking himself from the third and harmless bottle. When the other villains had killed him, as they had planned to do, they said, "Let us sit down and drink and make merry before we bury him." And one, taking up a bottle—it was one containing poison—drank from it and passed it to his companion, who also drank.

So, both dying of the poison, the words of the old man who had told them that they would find Death under the oak-tree were proved to be true.

THE ROMANCE OF THE LADY EMELYE

THE TALE TOLD BY THE KNIGHT

ONCE upon a time in ancient Greece, there lived a great duke named Theseus. No greater conqueror than he lived under the sun. He defeated the Amazons of Scythia, and married their Queen, Hippolyta, whose fair young sister, Emelye, he took captive. On his way back to Athens he was met by weeping women, who besought his help, because the tyrant Creon had massacred their husbands and captured the throne of Thebes. Sending Hippolyta and Emelye to Athens, Theseus turned aside, and with his army marched on Thebes. There he slew Creon by his own hand, and routed the tyrant's forces.

After the battle there were found, wounded and lying near where the fight had been fiercest, two handsome and richly-dressed young men, named Palamon and Arcite, cousins of the royal house of Thebes. Now, because of a vow he had made against Creon's house, Theseus ordered these young men to be kept in prison at Athens for life. When they had recovered from their wounds, Palamon and Arcite were therefore thrown into a dungeon in a strong tower near Theseus' palace in Athens, where they remained captive for several years.

It also happened that the narrow window of their dungeon overlooked the royal garden, and here, one bright May morning, the Lady Emelye—

> Far fairer to be seen
> Than is the lily on her stalké green,
> And fresher than the May with flowers new,

came forth to walk and gather flowers.

> Her yellow hair was braided in a tress,
> Behind her back a yardé long, I guess.
> And as an angel heavenly she sang.

Palamon himself awoke with the sun, heard the sweet song, and, peering through his prison bars upon the fair scene beneath, was stricken to the heart with love for the fair Emelye. His cry of pain aroused Arcite.

"Cousin mine," exclaimed Arcite in alarm, "what aileth thee? Why criest thou? Take in all patience our imprisonment, for the stars ordained it when we were born."

"Cousin," replied Palamon, "you are wrong. It was not our imprisonment that caused me to cry out. The fairness of the lady that I see yonder in the garden is the cause of my woe. I know not if she be woman or goddess in human form."

Then went Arcite to the narrow window, and when he too saw Emelye walking in the sunlight his despair was even greater than Palamon's.

"If," he cried, "I cannot see her day by day, I shall be nought but a dead man." Then, for the first time in their lives, there sprang up a feeling of enmity between the cousins.

This continued till one day a duke who knew Arcite, and who was an old and valued friend of Theseus, came to Athens, and, hearing of Arcite's captivity, begged Theseus to set the young Theban free. The request was granted on the condition that Arcite went his way, consenting never again to set foot on Athenian soil. For two years Palamon, still in prison, and his cousin, now at freedom, bewailed the cruel fate that divided them from the beautiful Emelye.

At last Arcite could bear his pain no longer, and returned to Athens as a poor labourer. In this guise he obtained a humble post in the household of the duke, where his manners soon won him advancement. Then, one night, Pala-

mon was enabled to drug his gaoler and to escape to a little wood near by, where he met Arcite, and the two fell to quarreling afresh over the object of their mutual affection. At length Arcite said he would bring food and weapons, so that on the morrow they could fight for the lady Emelye.

They were engaged in this conflict when they were surprized by Theseus and his retinue. Theseus, learning from Palamon who they were, condemned both to death, but on the intercession of the ladies of the company he ordained that the two rivals should go away for fifty weeks, at the end of which period each should return with fifty knights, to attend a great tournament, the victor in which should have the fair Emelye's hand.

The time passed, and when the hour of the tournament arrived it was decreed by Theseus that life should not be wasted, but that should either of the leaders be taken prisoner or slain the tourney should cease. Palamon was struck down by the Indian King Emetreus in Arcite's company, and taken prisoner; but as Arcite was riding proudly to the spot where Emelye was sitting his horse stumbled, and he was fatally injured by the fall. Whilst lying at the point of death in the palace of Theseus, Arcite sent for Emelye and Palamon. To Emelye he said:

"Nought may the woful spirit in mine heart
Declare a point of all my sorrows' smart
To you, my lady, that I love most;
But I bequeath the service of my ghost
To you aboven every creature,
Since that my life may now no longer dure.
Farewell, my sweet! Farewell, mine Emelye! (two)
And softly take me in your armés tweye,
For love of God, and hark to what I say.
I have here with my cousin Palamon
Had strife and rancour many a day i-gon (gone by),
For love of you, and eke (also) for jealousy."

But, he went on to say:

"In this world right now I knowé none
So worthy to be loved as Palamon,
That serveth you, and will do all his life.
And if that ye shall ever be a wife,
Forget not Palamon, that gentle man."

And so a brave man died. Emelye and Palamon were stricken with bitter grief, and Arcite's death was mourned by all Athens. Even the Duke Theseus bowed his head in sorrow. None could comfort him save his aged father, Egeus, "that knew this world's changes," and who said:

"This world is but a throughfare full of woe,
And we be pilgrims, passing to and fro;
Death is an end of every worldly sore."

Theseus cut down the wood where the cousins had fought, and gave to Arcite a befitting funeral. Then it came to pass, when time had brought healing to the hearts of all concerned, that Theseus sent for Palamon and Emelye, and, that of two sorrows might be made a perfect joy, the duke ordered that these two should take one another as husband and wife.

So, with great rejoicing, the marriage was celebrated, and Emelye loved Palamon so tenderly, and Palamon served Emelye so nobly—

That never was there word between them two
Of jealousy, nor of none other woe.

THE KNIGHT AND THE UGLY OLD WOMAN

THE TALE TOLD BY THE WIFE OF BATH

A KNIGHT of King Arthur's Court, by an unworthy deed, had earned the penalty of death. But, the Queen and her ladies gaining the King's grace, the knight was handed over to the Queen, who promised him his life if, within a year and a day, he could tell her what it was that women most desired.

Time passed sorrowfully for the knight. No satisfying answer could he discover of anyone. Then, when the day on which he was once again to appear before the Queen drew near, and he was returning from his quest, he met an ugly old hag, who, addressing him, inquired what it was that he sought.

"Promise me," said the old woman, when he had told her his story, "that you will do the next thing that I require of thee, if it be in thy power, and I will tell thee the answer."

The knight gave her his word, and together they journeyed to the Queen's Court. Here, as instructed by the old woman, the knight declared that the thing most desired of women was power. This was the answer, and he was adjudged to have saved his life. Then up rose

the old woman, and, telling the Queen of his promise, asked his hand in marriage.

"Take all my goods and let me go rather!" exclaimed the knight. But he was kept to his bond. When his newly wedded wife upbraided him for his treatment of her, he taunted her with her lowly birth, as well as her ugliness and poverty. To this she replied in words that have been full often repeated:

"Look who that is most virtuous alway,
Open and secret, and most intendeth aye
To do the gentle deedés that he can,
And take him for the greatest gentleman.
Christ will we claim of Him our gentleness,
Not of our elders for their old richesse.
For tho' they give us all their heritage,
For which we claim to be of high peerage,
Yet may they not bequeathé, for no thing,
To none of us their virtuous living.
That made them gentlemanly calléd be,
And bade us follow them in such degree."

When the knight had repented him of his unknightly mood, his wife asked him to choose which she should be—as she was, old and ugly, but devoted to him, or young and fair, but vain and fickle. In reply the knight put himself in his wife's "wise governance."

"Then," said she, "I have the mastery. And I will be to you both fair and true."

The knight, looking up, now saw, to his rapture, that what she said had come to pass. And the two lived to their lives' end in perfect joy.

THE DEAD BOY WHO SANG A HYMN

THE TALE TOLD BY THE PRIORESS

IT must be borne in mind in reading this tale that, at the time to which it relates, there was a great hatred between Christians and Jews. Both misunderstood one another, much as they do in Russia to-day; and few perhaps of Chaucer's pilgrims would have known enough to cast serious doubt on the truth of the Prioress's story, which was an old fable that may be briefly told:

Once, in a great city of Asia, was a quarter filled with Jewish money-lenders. The street in which the Jews lived was one through which was constant traffic. At one end of this street was a little school, to which Christian children went. Among these children was a widow's son, seven years of age. He had learned at his mother's knee to pray, and when he heard the hymn "Alma redemptoris" (Mother of the Redeemer) sung, so moved was he that, though he knew no Latin, he soon learnt to repeat the first verse. Then he asked another boy to tell him the meaning of the hymn, which finally he learnt by heart, and grew to love it so much that he sang it regularly as he went to and from school through the street where dwelt the Jews.

Satan then stirred the hearts of the Hebrews against the little singer, and they hired a wicked man to kill him and cast his body into a pit. The next day the widow sought everywhere for her son, and made piteous but useless appeals to all the Jews to tell her if and where they had seen him. They all said "Nay."

But Jesus of His grace
Gave to her thought, within a little space,
That in that place after her son she cried,
Where he was casten in a pit beside.

And hereupon the dead child began to sing the "Alma redemptoris" so loudly that all the place began to ring. The Christian folk passing through the street stopped to wonder at this marvelous thing. They sent for the Provost, and he, praising God for the miracle, had all the Jews taken and bound, and the child's body carried to the nearest abbey.

The guilty having been punished, preparations were made for the burial of the child. All the time the voice of the boy was heard singing the hymn he loved so well.

"Dear child," said the Abbot, "I conjure you, tell me why you sing, since that your throat is cut."

And the child replied that, as he was about to die, Mary, the mother of Jesus, appeared to him and, placing a grain upon his tongue, said he would continue to sing, till from his tongue this grain was taken.

The Abbot then took away the grain, and the boy "gave up the ghost full softily." Everyone was thereupon deeply moved And the little martyr's body was placed in a marble tomb.

THE NEXT STORY OF FAMOUS BOOKS IS ON PAGE 561.

THE KINGS LEAD THE HERMIT FROM THE HILLS

In the days when it was the proudest thing in the world to be Pope of Rome, Peter the Hermit, an old man of the mountains, was called upon to be Pope. But Peter would not, and it was not until two kings went barefooted to fetch him that Peter would come to Rome. In his palace the hermit Pope was miserable, and one day he ran away. He took a boat and left Italy; but his boat was wrecked in a storm, and he was captured and put into prison until he died.

THE STORIES WE READ

MORE stories from real history, more legends from the long ago, and the fable of a wise slave come into these pages. We must remember that the world is full of all kinds of stories, and that sometimes stories of things that really happen are more interesting than stories that are made up. The wonderful doings of fairyland, and the strange legends of things and places that have grown up in some mysterious way, are not more wonderful than the true story of the good Pope who ran away, which is told in the following pages. We should read these true stories, because they not only stir our imagination as fairy stories do, but are a great help to us in our endeavor to understand the actual story of the world in which we live. The fables which begin in these pages are little stories that help us to understand great truths, and we cannot read them too often or learn their lessons too well.

THE POPE WHO RAN AWAY

CONTINUED FROM P. 397

THERE was once a poor peasant in Italy who had twelve sons. The youngest but one of this large family was named Peter. He was a quiet, thoughtful boy, who cared more about the mystery of life than about the games and adventures of his brothers. When he was twenty years of age he said to his father that he would like to go away and be a monk, and his father blessed him and let him go, and away started Peter for a distant monastery. Here he remained, shut off from the world, for five years.

After these five years he took a journey to a range of mountains in Apulia, and there, in the silence and savage grandeur of a vast forest, he gathered a few quiet souls around him and began the life of a hermit. You must not think he was a coward who ran away from the troubles and sorrows of the world. He believed that nothing could help the woes of men so much as prayer; and he retired from the world because a hermit can pray more earnestly than one whose thoughts are taken up with the worries and excitements of daily life.

Here, in the wild forests on the mountain-side, far away from cities and villages, lived Peter of Morrone till he was an old man. His followers loved to sit round him and listen to his conversation. He made God so real to them. When they listened to him they felt that the earth was a mere dream, and that soon it would melt away, and their eyes would behold legions of bright angels. Peter was one of those holy and simple men we call saints.

One day, when Peter was an old man, as he sat thinking of God in his mountain cell, there came to him great archbishops of the Church, and asked him to come away with them and be the Pope. Peter was even more horrified than surprized. He to be Pope! He, a poor hermit, to be the head of Christ's Church on earth! He shrank in fear from such a thought.

He felt that he was not holy enough and pure enough. But more people came to his cell—barons and cardinals and statesmen. And among these crowds of people were two great kings. The kings knelt before him. "Come and be the Pope," they cried. "For two years the Church has been without a Pope, and no one can agree who should wear the crown; but your fame as a pure saint has traveled into the world, and if you come with us all the nations will have peace, for all men wish you to be Pope."

It was with tears in his eyes that the hermit implored the great kings to leave him to his mountain cell. But they would not be denied, and at last, very sorrowfully, Peter had to yield.

And then the hermit set out for the great city to be crowned Pope. He rode upon the back of an ass. The two kings, both of them barefoot, walked on either side of him holding the bridle. Behind him came a great

shining host of cardinals and noblemen. The news spread far and wide of his coming, and crowds of peasants came streaming over the mountains to see the wonderful sight.

Soon Peter was surrounded by a vast multitude. And thus he entered the city—two barefoot kings leading his donkey, a cavalcade of princes and noblemen surrounding him, and a great army of people following with shouts and hymns. What a triumph for the eleventh son of a poor peasant!

But Peter was miserable and unhappy in his palace. He found himself—a pious, simple man who knew nothing but his Bible—surrounded by clever men who wished his influence. He was sad and lonely amongst these brilliant schemers, and sighed for his mountain cell. He wanted to talk, not about kings and revenues, but about God and His love.

The story is told that one who did not like Peter's election plotted to drive the simple Peter from the throne. He arranged secretly that trumpets should be sounded near the Pope's bed at night, and that voices should be heard as poor Peter awoke from sleep telling him that he must lay down his power and go back to his hermit cell. Peter believed these voices came from heaven, and, bitterly reproaching himself for ever having dreamed that God could have meant so poor and humble a hermit to be Pope, he gave up his throne and secretly made his escape from the palace.

But the successor of Peter, directly he was made Pope, found the trouble that arose more than he could control. The Church had two Popes! What could be done? He sent out to catch and bring back the escaping hermit.

But Peter had traveled fast. He made his way through the forests till he came to the sea, and there, getting into a little boat, steered for a neighbouring coast. A storm arose, the frail barque was thrown up against another shore, and Peter was recognized, captured, and taken to a castle.

Here he was placed in a miserable and very unhealthy cell, and in his prison he lived for ten dreadful months, dying at the age of eighty-one, very glad indeed to be free of a troublesome and quarrelsome world, and still more glad to be going into heaven to ask God's mercy and forgiveness for what he deemed his sin.

If you ever go to Italy, and visit the Celestinian Convent in the town of Aquila, you will find there the tomb of Pope Celestine V. This is the tomb of our poor Peter, the eleventh son of a peasant, who became a Pope, and ran away from his throne.

CUNNY RABBIT AND THE LION

CUNNY Rabbit was a little creature, but he was very shrewd. Even the lion was not a match for him. The lion stole a fawn from a gentle doe, and would not give it back. The doe appealed to all the great beasts for help, but they were afraid of the lion. Then she came to Cunny Rabbit, and Cunny Rabbit said:

"Tell all the animals to meet in council to-morrow at my burrow to settle the dispute."

In the meantime Cunny Rabbit dug a long underground passage from his burrow to an outlet behind a distant bush. The animals met in council and listened to the case, and they decided that the fawn was the child of the lion. None of them dared to speak the truth, because they saw that the lion was watching them with angry eyes. But Cunny Rabbit peeped out of his burrow, and boldly cried out in a loud voice against the lion.

"Nonsense! The fawn belongs to the doe. The lion is a wicked thief!" cried the rabbit.

The lion sprang at him, but Cunny Rabbit darted down his passage and came out behind the bush, and escaped.

"I'll starve him out!" roared the lion. He waited and waited by the burrow for Cunny Rabbit to appear. He grew thin and feeble, but still he would not give in, for he thought that if he went in search of food Cunny Rabbit would get away. So there he stayed until he starved to death, and the doe was then able to recover her dear little fawn.

THE FABLES OF ÆSOP THE SLAVE

A FABLE is a story told with a purpose, and the purpose is to illustrate a truth. Thus the fable of the hare and the tortoise illustrates the truth that slow, steady progress is better that occasional jumps. The truth illustrated, or the "moral" of each fable, is put in different type at the end of the story. Fables are very old, and the best we know were written by a slave named Æsop, who lived 600 years before Jesus Christ. Many millions of boys and girls since then have read Æsop's fables, and we can never read these little stories without learning great truths of life from them.

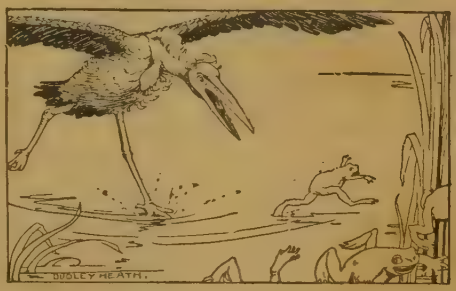
THE FROGS WHO WANTED A KING

IN the days of old, when the frogs were all at liberty in the lakes, and had grown quite weary of doing every one as he pleased, they assembled one day together, and, with no little clamor, petitioned Jupiter to let them have a king to keep them in better order and make them lead honester lives.

Jupiter, knowing the vanity of their hearts, smiled at their request, and threw down a log into the lake, which, by the splash and commotion it made, sent the whole of the frogs into the greatest terror and amazement. They rushed under the water and into the mud, and dared not come within ten leaps' length of where it lay.

At length one frog, bolder than the rest, ventured to pop his head above the water, and take a survey of their new king at a respectful distance. Presently, when they saw that the log lay quite still, others began to swim up to it and around it, till, growing bolder, they at last leaped upon it, and treated it with the greatest contempt.

Dissatisfied with so tame a ruler, they petitioned Jupiter for another king, upon which he sent them a stork, who no sooner arrived among them than he began laying hold of them and devouring them, one by one, as fast as he could, and it was in vain that they endeavored to escape him. Then they sent Mercury with a private message to Jupiter, beseeching him that he would take pity on them once more; but Jupiter replied that they were only suffering



the punishment due to their folly, and that another time they must learn to let well alone, and not be dissatisfied with their natural condition.

Let well alone.

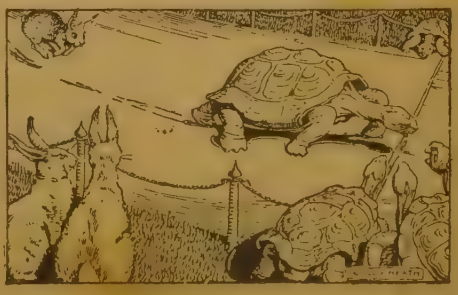
THE HARE AND THE TORTOISE

A HARE jeered at a tortoise for the slowness of his pace. But he laughed, and said that he would run against her and beat her any day she should name.

"Come on," said the hare; "you shall soon see what my feet are like."

So it was agreed that they should start at once. The tortoise went off, jogging along, without a moment's stopping, at his usual steady pace. The hare, treating the whole matter very lightly, said she would first take a little nap, and that she would soon overtake the tortoise. Meanwhile, the tortoise plodded on, and the hare woke, only to see that the tortoise had won.

Slow and steady wins the race.



THE FOX AND THE CROW

A HUNGRY fox saw a crow one day sitting on a tree with a piece of cheese in her beak.

"You are the prettiest crow I ever saw," said the fox. "I wish you would sing a song. A bird with lovely feathers always has a sweet voice, and it is a very long time since I heard any fine music."

The silly crow was so proud on being asked to sing that she opened her mouth to caw, and let the piece of cheese fall to the ground. The cunning fox snapped it up, and said to himself, as he trotted away:

"I said that she was beautiful, but I did not say that she was wise."

If we are vain and love to be flattered, we shall become foolish.

THE WOLF IN SHEEP'S CLOTHING

A WOLF once dressed himself in a sheep's skin, and got shut up at night with some sheep.

Before any of the pretty lambs were hurt, a shepherd came to the fold to get the fattest sheep in the flock. In touching them to see which was the best, he found an animal with hairy ears and a wooly back. It was the wolf lying down with the sheep to wait for an opportunity of carrying off his prey.

"This is a strange kind of sheep," the shepherd said, and, putting a rope about its neck, he strung the animal high up on a tree.

"Are you hanging a harmless sheep?" asked a passer-by.

"No," said the shepherd, "I am only killing a wolf in sheep's clothing."

Do not pretend to be good; be really good.

THE FOX IN THE WELL

"HELP! Help!" said a fox who had fallen down a well.

A wolf ran to the edge of the well and saw the fox struggling hard to keep his head above water.

"My poor, dear friend," said the wolf, "you are indeed in great danger of losing your life. Believe me, I am very, very sorry for you. How long have you been down there?"

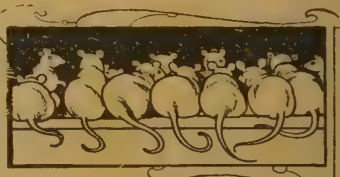
The fox replied:

"If you wish to help me, waste no time in talking, but get a rope and pull me up. I cannot struggle any longer, and I shall drown."

The wolf sighed very sadly and walked away, and the fox sank into the water and was drowned.

An ounce help is worth a pound of pity.

BELLING THE CAT



SOME mice lived in a house in which there also lived a great, fierce cat.

Even in the dark night they could not stir from their holes without being pounced upon, and it was a hard thing for them to get anything to eat. One day they all met together to find out a way to escape from their terrible foe.

"I will tell you what to do," said a young mouse. "It is quite easy. Tie a bell about the cat's neck. As the cat walks the bell will ring, and we shall know where he is."

At this speech the mice squeaked for joy, until an old mouse asked:

"But who will go out and bell the cat?"

None of the mice dared do this.

Some things seem very easy at first, but they are easier said than done.

THE WITCH'S RING

A MILLER of Mayfield had three sons, who all fell in love with the same girl. Her name was Marjorie, and she was the daughter of a farmer at Rotherfield, and the prettiest maiden in Sussex. But a rich old miser who lived in the village began to court her, and the farmer favored his suit, and kept the miller's sons away.

At last Richard, the oldest son, determined to propose to Marjorie before the miser won her. On his way to the farm he met Mad Molly. She was an old, feeble woman, suspected of being a witch.

"Good-day, my son," said Mad Molly. "Where are you going this morning?"

Richard hurried on without replying. On reaching the farm he blurted out a proposal of marriage, but Marjorie only laughed at him.

Rowland, the second son, then tried his luck. He also met Mad Molly, and hurried on without answering her, and he also returned in a downcast mood. Then Robin, the youngest boy, went to the farm. But he set out without hope. He was a strong, clever, and gentle lad, but he had a very long nose, and this, as he knew, made him look ridiculous. When Mad Molly asked him where he was going he said:

"On a hopeless errand, granny. I am about to call on Marjorie and ask her to be my wife."

"And your wife she shall be," said Mad Molly. "Look at this ring, my son. Now put it on your finger and say 'Bless it!' "

Robin did so, and his nose grew half an inch shorter, and he became very handsome.

"Now," said Mad Molly, "if Marjorie refuses you, give her the ring to wear. Then every time you say 'Drat it!' her pretty nose will grow half an inch longer, and she will become ugly, and be very glad to marry you. Then you have only to say 'Bless it!' and her nose will grow shorter and she will recover her beauty."

Robin ran to the farmhouse, and, as Marjorie was out, he sat in a chair and closed his eyes. Just then the miser entered, and saw the ring on his finger.

"An engagement ring!" he said. "I'll keep that."

He pulled it off Robin's finger and put it on his own. But Robin was awake, and he began to whisper "Drat it! Drat it!" and the miser's nose grew longer and longer.

"Something is stinging me!" cried the miser. "My nose is swelling frightfully!"

"Something is stinging me!" cried the miser, running off to a doctor. "My nose is swelling frightfully!"

Happily, Robin did not want his ring any more. Marjorie was surprised to see how handsome he looked. She had always liked him for his gentleness, and she now fell quite in love with him, and agreed to marry him as soon as he got a farm.

"Return my ring and I'll cure you for one thousand pounds," said Robin to the miser.

The miser at last did so, and Robin and Marjorie then married and bought a farm, and lived there very happily together.

THE NEXT STORIES BEGIN ON PAGE 575.

The great Newfoundland dog was so called because it originally came from the Island of Newfoundland, though very few are now found there. It was used by the fishermen to draw little carts, just as dogs now do in Holland, and shared good times and hard times with its masters. It is a very intelligent and faithful animal. The dog in the picture was painted by Sir Edwin Landseer, a well-known animal painter.

The most famous dogs abroad are the St. Bernards, the powerful creatures which live in the Alps and are trained by the monks at the monastery of St. Bernard. When a snowstorm occurs in the mountains these dogs go out, with a little flask round their necks, and seek travelers who are lost in the snow.

The photographs in these pages are by Chas. Reid, Lewis Medland, and Ernest Landor.

WHAT THIS STORY TELLS US

HERE we read about some of the animals that have become so tame that they live with us as pets. Everybody loves dogs, from the great Newfoundland, that draws carts in its own country, and the St. Bernard, that rescues frozen travelers in the Alps, down to the playful little dogs that we nurse in our laps. Here, too, we read about the cats that live with us in our homes, and their cousins, the savage wild cats that roam in the northern forests. Into these pages also come our rabbit and guinea-pig friends, with two stranger animals that may be kept as pets—the hedgehog, that rolls himself up into a ball of prickles, and the tortoise, that can live for a hundred years.

OUR ANIMAL FRIENDS

DOG CAT RABBIT GUINEA PIG TORTOISE HEDGEHOG

CONTINUED FROM 414

AS you read the story of Robinson Crusoe, do you not feel that you could cry "Hurrah!" when he saves the dog and the two cats from the wreck of the ship?

"That is splendid!" you say to yourself. "The poor man has got no friends or relations there, but at least he has got some pets. They will be his friends, and they will be of service to him on the desert island. The dog will help him to hunt, and the cats will keep the great, hungry rats and the little mice from eating his little stock of food."

He must be a strange creature who does not love some pet. The boy or girl who has never known the pleasure of keeping a dog or cat, or rabbit or guinea-pig, or some other little friend of the animal world, does not know how jolly life can be.

The great thing to remember is that we must not make prisoners of animals and birds which ought to live in freedom. The man who cages the sweet-singing lark or nightingale may not mean to be cruel, but he is cruel. It is dreadful to see a dear little squirrel, which is so handsome and merry among the trees, shut up in a horrid little cage, only able to get exercize by turning a wheel round and round, until his poor little head is swimming with the continual motion.

Once a poor man who had done wrong was in prison. He had no friends to visit him in his cell or to say a kind word to him. His life was black and gloomy, and he was very wretched. But one day, out of a corner in his cell, there popped a little mouse. It was very shy, and ran away as soon as he moved. But by-and-by it came back, and he threw it a crumb from his poor dinner. After that the little mouse visited him every day.

It became quite tame, and when he had his meals it would sit by him and take the crumbs which he gave it. The mouse would frisk and frolic about the cell as though it were the happiest little creature on earth, and the poor convict got to love it very dearly. It was the only little friend he had in all the world. This mouse was not afraid of him. It did not mind his gloomy thoughts, it did not fear that he would do it harm. It would nestle about his neck and play about his hands. They were very great friends, and his cell never seemed quite so dismal when the tiny mouse crept in.

One day, while the warder was in the cell, the mouse came in and ran up to the prisoner. The warder, who was a hard, cruel man, asked what this meant. The poor man explained that the little mouse was his friend, and came to see him every day. The warder said that such things could not be allowed, and, so saying, he killed the prisoner's little friend. The poor man gazed

for a moment at the little crushed form, then he gave a great cry of rage, and struck down the man who had done the cruel and thoughtless deed.

It is good for young people to have pets, because it teaches them to have thought and kindness for others. It is of no use their having pets if they leave the care of them to other people. That is only pretending to love our animals.

THE WONDERFUL THINGS A DOG WILL DO FOR ITS MASTER

If we have dogs or cats, or pigeons, they must look to us for their food and proper treatment. The little trouble they give us is well repaid by the love they show us and the faithful way in which they serve us and take care of us.

What a splendid companion a dog is! He will guard your life if you are attacked. He will hunt for you. He will run errands for you if you train him. He will swim rivers to get to you. He will play with you. He will do anything but speak to you. Even that he tries his best to do, and you can get to understand one another quite well by practice. It is good for you to have a dog about the house, and it is good for the dog to be there.

All the dogs were wild once. They belonged to the same family as the wolf and the fox and jackal, as we have already seen. And the funny thing is that if we left the dogs to themselves they would become wild animals again. As we have already seen, there are dogs on an island off the coast of Ireland which are really little wolves.

An Eskimo dog which draws a sledge to-day is very often part wolf. Some of the American Indians have dogs which are related in this way to the prairie wolves. The dogs used in India for hunting are, as a rule, the wild dogs made tame. Australia has thousands and thousands of wild dogs, called dingoes, just as it had long before white men first saw the land.

ALL DOGS WERE ONCE WILD, AND WOULD GO WILD IF LEFT TO THEMSELVES

It is wonderful to think that the great St. Bernard and the Newfoundland and the mastiff, and the tiny pug and poodle, come from dogs which were once wild as wolves. Yet it is so, and to-day you can hardly tell the difference between the strong Hungarian sheep-dog and the wild wolf from which he is descended. And, as we have been saying, all the tame dogs would go wild again if left to themselves. Some tame dogs were left on Robinson Crusoe's island, and nobody went there for thirty years. The dogs had become quite wild. They hunted just like wolves, and they had forgotten how to bark. Wild dogs rarely bark—they howl. These dogs now did the same, and it was not until they got used to men that they remembered that they ought to bark.

A few years ago two dogs at Nottingham lost their owners, so they made homes for themselves in a field outside the town. They hunted sheep and lambs in the neighborhood, and did great damage, just as the wild dogs in India and Africa and Australia do. They had to be shot. They looked just like wolves, so much had they changed during the few months in which they had lived the life of wild dogs. Each country has its own type of dog, but in America we get them all. For this is the best country in the world for dogs.

HOW DOGS HELP TO CARRY ON THE WORK OF OTHER COUNTRIES

The great Newfoundland, of which we are so proud, is simply a beast of burden in its native land. It has to draw heavy loads, and gets very little food, and that of the poorest sort. The Eskimo dog, which some people have as pets in this country, is another which is a hard worker in the frozen North. It draws heavy sledges over the snow and ice, and has to live through the winter on such poor food as its master cannot eat. In some European countries, too, dogs have to work. In Holland and Belgium they draw carts containing milk and vegetables. When they are well treated they seem to like the life, but when you see them lying down in the street while fastened to their carts you feel that they must be very tired. They used to draw carts in England not very long ago, but now the law does not allow it.

The most famous of the dogs abroad are the St. Bernards. These are great powerful creatures, which live up in the Alps. They are kept and trained by monks at the monastery of St. Bernard. When a snowstorm occurs in the mountains, these fine dogs go out, with a little flask round their necks, and seek poor travelers who have fallen frozen in the

The retriever is a most useful dog. It was the skill of this dog that led men to train it. It is generally very clever at fetching and carrying things for its master. The writer of this story had one of these dogs, which used to come and meet him. If his master were not going home he would place a note in the dog's mouth, and the animal would then run home and deliver the note and afterwards return for its master.

The bloodhound was formerly used for tracking game which had been wounded. It has a very keen nose, and can follow a scent for miles. Its keenness was made use of for tracking men who had committed crimes, and even in our own day the police find it very useful in assisting them to hunt down criminals.

snow. They scratch away the snow, and, if they can, rouse the poor man, so that he can drink from the flask. All the time they bark loudly. In the silence of the great mountains their bark can be heard for miles, and the good, kind monks go where they hear the sound, and help the traveler to the warmth and shelter of the monastery. Other big dogs in this country will seek those they love who are lost, but the St. Bernard is the only one who does this in the snowy mountains of Switzerland.

A DOG THAT USED TO DELIVER A LETTER FOR ITS MASTER

The retriever is very clever at fetching and carrying things for its master. The writer of this once had a retriever which used to come to meet him. If his master were not going home, but wished the dog to return, he would place a paper in its mouth and tell it to go home, and it would race off and safely deliver the paper; then, if allowed to do so, it would return for its master.

It was the dog's skill in hunting which first made men train it. Ever since it has helped him in hunting. To-day there are dogs kept for nothing else but the hunt. We have read about those which hunt the fox. Others, called pointers and setters, seek out game for their masters. When they find a bird, or other game, they stand perfectly still until their masters come up to shoot what they have found. The blood-hound used to be set to work to track game which had been wounded. It has a very keen nose, and can follow a scent for miles. Its keenness was made use of for tracking men who had committed crimes: and even in our own day the police have sometimes been glad of its help.

THE CLEVER LITTLE SHEPHERD DOG ON THE LONELY HILLS

The most useful of all our dogs is, perhaps, the shepherd's dog. In Scotland this is the Scotch collie. In America it may be either a collie with a smooth coat, or that jolly-looking dog with shaggy hair and no tail. They all do the same sort of work, and no shepherd could get on without them. Up in the lonely hills the dogs are the friends and only helpers of the lonely shepherds. The dogs keep the flocks of sheep together. If one gets lost, they find it and bring it back to the rest. They can tell the sheep of their own flock from any others, though there are hundreds of them.

In a great storm several flocks got mixed up, and the shepherds went away and did not see each other for a year. But the dog of the shepherd who had lost sheep knew his friends again. He dashed into one of the flocks, and barked and yelped till he had driven out sheep after sheep belonging to his master's flock. When they came to examine those which the dog had thus found, they saw that each bore the mark of the shepherd to whom they were thus restored, though he had been unable at first to recognize them.

There are scores and scores of different sorts of dogs, but they are all alike in this respect; that they love their masters and mistresses, old or young, and deserve to be loved themselves. They do such funny things sometimes. When you see a dog pick up a piece of stick, run away with it, then sit down and wait till you get nearly up to it, then bound off again, you see the nearest thing to the fun of human beings which an animal can do.

WILD CATS AND TAME CATS, AND A CAT THAT MIGHT KILL A DEER

You can make great friends of cats, but they are never quite so free and loving as dogs. They are always a little more shy, a little more independent. They retain a little more of their wild nature than a dog does.

Some cats never have been tamed. We used to have great numbers of wild cats in this country, and there are many left even now, in the far West, and in Northern Canada. They are very savage and live amid deer and eagles and other creatures such as we never see in the East. They are bigger and stronger than the tame cats. They make their homes in hollow trees or in tiny caves. They are savage animals, and would no doubt attack a man in the winter woods if they were hungry. They live mostly by catching birds, mice, squirrels, and gophers; but in the far north feed mostly on the big hares which are very numerous in Canada. They will even sometimes kill young or weak deer.

We have nothing like that to fear from the ordinary house cat, which is a very different animal, though, if it is

THREE BEAUTIFUL SMALL DOGS THAT WORK FOR MEN

The Eskimo dog is a hard worker in the frozen North. It draws heavy sledges over the ice and snow, and lives on any food that it can get.

This is a happy sheep-dog, with shaggy hair and no tail. The shepherd could hardly get along without it. These dogs keep the sheep together.

The pointer is used to seek game for its master when he goes out shooting. When it finds a bird or other game, it stands perfectly still till its master comes up to shoot what it has found. It would be almost impossible to catch some kinds of game birds without its help, as they cannot be seen when hiding.

badly treated, it can be a terrible enemy with its sharp teeth and strong claws. Our house cats were probably first tamed in Egypt. There are many sorts to-day —white cats, black cats, blue cats, grey cats, sandy cats, tortoiseshell cats, cats with long fur, cats with long tails, cats with bushy tails, cats with no tails at all. These latter come from the Isle of Man, and are called Manx cats.

THE CATS THAT KILL THE RATS THAT SPREAD THE PLAGUE

If left all to itself, the cat would go wild in the woods, where it can catch birds and mice and rabbits. It is useful, as we have already learnt, in killing field mice, which destroy the nests of the humble bees. It is important, too, in killing the great ugly rat. So important is this part of its work that men now send large numbers of cats from England to India to kill the rats which spread the disease called the plague there.

Cats can never be trained quite as dogs are, yet they have wonderful brains and loving natures. There was one which lived in a house where a dog was kept. The cat did not like the dog, until a cruel man struck the dog and injured its eyes. Then the poor dog could not see at all well. As it returned to the house it would sometimes run against the doorpost and hurt itself. The cat watched this several times, then it used to go out into the garden after the dog and guide it back in safety. The two would trot back to the house together, side by side, and they never quarreled again as long as they lived.

CATS AND DOGS THAT LIVE TOGETHER AND BECOME GREAT FRIENDS

When we talk of a "cat-and-dog" life, we mean the lives of people who are always quarreling. But cats and dogs do not always quarrel. When they live together they generally become the best of friends.

There was a naughty little puppy which used to tease a big, stately cat. Puss was too full of dignity to hurt the puppy, but you could see that she was cross. Well, this cat's kittens all died, and her grief was dreadful. She mourned and went about the house as if she would never be happy any more. The dog could not understand it. He ran about after her, not teasing, but anxious to know what made her sad. At last he seemed to understand. He rushed into the garden, scratched up some soil, and found the place where the kittens were buried. He carried these into the house and laid them down before the cat. She saw then that they really were dead, and she saw that the dog was sorry for her. She ceased to fret for the kittens, but then and there made friends with the dog; and, after that, wherever the one went there the other was sure to go.

Some cats can ring bells and open the latch of a door. One cat could not reach the bell of the house at which it lived, so as a lady was passing it seized her skirt and gently pulled her towards the door, and waited until she had rung the bell. Then puss said a little "thank you" with her mewing, as well as she could, and passed with dignity into the house, as though this were all just as it should be.

HOW THE FIRST RABBIT REACHED ENGLAND

One of man's oldest pets is the rabbit. We are speaking, of course, of the true rabbit, or bunny, which we in the United States know only as a pet (our field rabbits are quite different), and we at first imported them from our forefathers in western Europe. Even there, where, when wild, they become a great pest to the farmer by digging up his fields and eating his clover and grain, the rabbits are strangers, for their real home seems to have been Greece, Egypt, and eastward. The Romans tamed them, and then, probably, carried them north and west. Anyhow, they have been cultivated for hundreds of years, and the result is that we see a great variety of pretty rabbits,brown, grey, black, white, silver, and so on. They propagate with great rapidity.

It seems hard to believe that the great lop-eared rabbits can be related to the little wild rabbits, whose ears are short and bodies small. But they are. The change is the result of ages of care and feeding and selection. Some of these lop-eared rabbits have ears which measure over twenty-three inches from tip to tip, and more than five inches across each ear. A rabbit like this may weigh as much as eighteen pounds, which is nearly as much as six ordinary wild rabbits weigh. Of course, as his body is so much bigger, the rabbit has bigger

SOME TAME CATS AND THEIR WILD COUSINS

Here are seven little kittens sitting in a row to have their photograph taken. They are very well behaved though one was unruly and lay down. We do not often see such a large family of kittens as this.

We can make great friends of cats, but they are never quite so free and loving as dogs. They are always more shy and independent and retain more of their wild nature than a dog does. Our house cats were probably first tamed in Egypt. On the left we have a picture of a Manx cat, which has no tail. The cat on the right is a long-haired Persian, a kind of which most people are very fond.

There are a few wild cats left now in the north of Scotland. They are very savage and live among the deer and eagles, and are bigger and stronger than tame cats. They make their homes in hollow trees and tiny caves. They are the most savage animals now living in Great Britain, and are never tamed.

bones to carry it. His legs are thicker than the wild rabbit's, and the weight of his ears has made his head longer than the wild one's. But though he looks so big and strong, and though, if you make him angry, he can give you a bad blow with his hind legs, he is not so clever as the wild one. The rabbit which has to live by his wits has a better brain than the rabbit which idles in a hutch and gets fed without any trouble.

The guinea-pig is a timid little creature until he gets to know you. Big boys and girls say to little boys and girls, "If you hold him up by the tail his eyes will drop out." Of course, he has no tail; but if he has not a tail, he has a squeak which sounds almost like a shrill whistle.

THE TIMID GUINEA-PIG AND THE TORTOISE THAT MAY LIVE A HUNDRED YEARS

When he gets to know you, he is as tame as a rabbit, and a jolly little friend. There are several sorts, and some cost a great deal of money. Some have long hair like silk; some have their hair in rosettes; and then there are the tortoiseshells, and the reds and blacks and browns and whites. The agouti guinea-pig looks a sort of reddish-brown, but if you turn back his fur you will see that each hair is colored just like the quill of a porcupine.

There is no prettier pet than a baby guinea-pig. Rabbits are born without fur, and have their eyes closed, but the baby guinea-pig has fur and teeth, and looks like a lovely little humble bee. He can squeeze through almost any wire, for where he can make his tiny thin head go, his elastic little body will follow. So, where there are baby guinea-pigs, extra fine wire must be put over the old wire. Dogs, cats, rabbits, guinea-pigs—what other pet shall we have? We must not think about birds now, for they come in later. Let us have a tortoise. In English villages you may hear men in the street call, "Have a tortoise to eat up the beetles." Nearly everybody thinks that tortoises eat beetles, but tortoises cannot bear beetles. They like nice, fresh, juicy lettuce, and they will eat young cabbage-leaf if they cannot get lettuce. But you must not be surprized, when you get your tortoise, if it does not eat for a week or so. These creatures may live hundreds of years, and can go a long time without food.

THE TORTOISE THAT SLEPT IN A BASKET AND WOKE UP BY MISTAKE

If left out in the garden, the tortoise will bury himself in leaves or mold for the winter, and sleep while the cold weather lasts; but if he is kept in a warm conservatory, and given plenty of food, he will keep awake all the winter.

Once a tortoise was wrapped up and put into a basket to sleep through the winter. When he had been asleep some weeks a cat went to sleep in the basket and made the tortoise very warm. The tortoise thought the summer had come, and woke up, just as the bees think the day has come if you turn an electric light on their hive in the night.

It is interesting to see him feed. His mouth is like that of a lizard or a bird. It has no teeth, but two sharp, horny jaws. With these he can bite a piece out of the lettuce, then swallow it down without any further trouble.

To see the biggest tortoises, one must go to the Zoo, where there are some as big as coal-scuttles on legs. Queen Victoria had one which was so big that she sent for Sir Richard Owen to measure it. While he was sitting on its back, it calmly walked off with him. That one measured twelve feet round, and was nearly two hundred years old.

English children like to keep the hedgehog, an animal common in Europe, but not found in America. It is not much bigger than a guinea-pig, and creeps about hunting for insects. He gets quite tame, and, where there is plenty of food, is as happy about a garden as in the woods.

WHEN THE HEDGEHOG IS ROLLED UP HE IS SAFE FROM ALL HIS FOES

He is a most interesting little animal. From his head to his tail he is covered with sharp, strong quills, but under his body there is soft, warm fur. So, when he is alarmed, he curls himself up, as a porcupine does, with his head underneath, and there he is, simply a ball of sharp, brown spikes, ready to hurt the hand of man or the mouth of animal which tries to do him harm.

THE NEXT NATURE STORY IS ON PAGE 625.

Here is a family of guinea-pigs. They are timid creatures till they get to know us, then they are as tame as rabbits, and make happy little friends. But they must be handled gently, as they are very easily frightened. Guinea-pigs make a sound like a very short, shrill whistle. They have no tails.

There are several sorts of guinea-pigs, and some cost a great deal of money. Some have long hair like silk, as in this picture, some have their hair in rosettes, and there are the tortoiseshells, the reds and blacks, and the browns and whites. The baby guinea-pig can sqeeze through a very small space.

The hedgehog is a most interesting animal. He is covered with sharp, strong quills, but has soft fur underneath. Like a porcupine he can roll himself into a prickly ball, and be safe from his enemies.

A tortoise is an interesting pet. It likes lettuce, but will eat cabbage if it cannot get lettuce. These creatures sometimes live for hundreds of years, and can go without food for a long time.

THE WONDERFUL FLIGHT OF THE BIRDS

One of the great wonders of the world is the annual flight of the birds over the sea when our summer ends. We have all seen the flight of the swallows, the great clustering of the birds on the telegraph wires of our country lanes, or by the water-side, or on the eaves of the houses. This flocking is the beginning of the leave-taking. What is it that tells the birds that winter is coming, that their food supply is at an end? What is it that guides them on their way? Perhaps they have a wonderful *sense of direction*. Some people can never find their way; they have no *sense of direction*. But the birds never fail. They fly from North to South America—so quickly that a bird waking in America in the morning may sleep in Brazil at night.

WHAT THE WISE MAN TELLS US

IN this part of our book we shall learn what makes the difference between music which is agreeable and a noise which is disagreeable; and how the strings of a piano vibrate and make music; the way in which our eyes deceive us, and how we cannot see some things which exist, and see others which do not. We learn how the cinematograph makes moving pictures in the brain, and how it can teach us many interesting things. No one, not even the Wise Man, can tell us how the birds find their way in the long flight across the seas during the migration season, but he tells us about the wonderful sense of direction which guides them to their destination. Lastly we learn how water boils when it is very hot, and why an egg cannot be boiled hard on the top of a high mountain.

WHERE DOES MUSIC COME FROM?

CONTINUED FROM 392

WELL, said the Wise Man, I think you should have asked me first where does sound come from?—for music, after all, is simply a special kind of sound. I do not think you need me to tell you what other kinds of sounds there are besides music. We call these other kinds of sounds noise.

A sound, then, may be musical or it may be just a noise, and I can tell you quite well what the difference is. All kinds of sound are really the same, and they simply consist of waves in the air.

CAN SOUND BE SEEN AND FELT?

If you say you can scarcely believe this, because you have never seen them, I reply that they are not meant to be seen but to be heard, and you have certainly heard them. These waves in air that we hear, though we cannot see them, are really wonderfully like waves in water, which we can see, though we cannot hear them. The air, after all, is not so very different from a great ocean of water. If there were two fishes living in the sea or in a lake, you can understand that if one of them flapped his tail he would make a wave of water which the other fish might feel.

When we speak or sing, or clap our hands, we make a wave of air very like that wave of water, and other people feel it in a particular kind of way, which we call hearing. After all, hearing is just feeling with our ears. These waves in the air move very quickly, and are very tiny, but they are of many different sizes, even though they are all very small. The different kinds of waves make different kinds of sounds. If you make a wave in the air which is jerky and *not regular*, but just comes along "anyhow," then the ear, when it feels or hears that wave, does not like it, and that is the kind of wave that makes a *noise*. But if someone is singing, or if you strike a note on the piano, then the wave that is made is a regular and even one, and the ear likes it, and calls this a musical sound.

HOW DOES THE PIANO PLAY?

The simplest way of understanding all this is really to take a piece of string and stretch it tightly. This piece of string is just like the wire inside a piano, which you hit when you strike a note; and the wire is stretched just as the string is stretched. When the piano-tuner comes, he goes over all the wires inside the piano to see that they are stretched just as much as they ought to be. Well, now, if you take this string and twang it, you can *see* it moving backwards and forwards, and can hear a low sound. When anything moves backwards and forwards like this, we say that it is *vibrating*,

which simply means *trembling*. Every time it moves it makes a little wave in the air. If you make the string shorter, or if you stretch it tighter, it vibrates more quickly, and the musical note it gives out is a higher note, more like the treble of the piano. When we speak or sing, we make two chords in our throats called the vocal chords vibrate or tremble, just like this chord or string that we can see vibrate for ourselves.

CAN WE SEE EVERYTHING?

I think we may almost say that there are just two sorts of people in the world—the foolish, who think they see all there is to see, and the wise, who know that they don't. This applies to seeing with the eyes of our heads, and to seeing with the eyes of our minds—which you mean when someone explains something to you, and you say: "Oh, I *see* now!"

One of the greatest and wisest men who ever lived said that the highest knowledge a man could have was to know that he knew nothing—nothing, that is, compared with all that there is to know. For this, and other great sayings, this wisest of men—his name was Socrates—was murdered by his fellow-citizens over 2,000 years ago.

Even with actual seeing, and the best and brightest eyes, we see only a little of what is there, and usually see only its surface. That is why *insight* is such a good word for wisdom: it means that the eyes of a man's mind *see into* a thing. Then our eyes only see certain kinds of light. There are other kinds, *which are darkness to us*, yet we know that they can be seen by the eyes of ants, and also they can be seen by the lifeless eye of the camera, which has seen for us hundreds of thousands of stars that our eyes have never seen, and never can see.

DO WE SEE WHAT IS NOT THERE?

Indeed we do, said the Wise Man. Besides, not seeing most of what is "there" our eyes often see—or think they see—what is *not there*. Some of the most remarkable events in history have been due to mistakes of this kind. Animals also make these mistakes; but you know that one of the great differences between us and the animals is that we have *reason*. One of the great duties of the reason is to judge of what the senses, like eyes and ears, tell us, so that we shall not be deceived, or so that we shall *learn all the more* from our mistakes.

Too many people, however, let their reason rust, and are at the mercy of whatever their senses report to them, without being able to judge and distinguish between mere appearances and what is real. It is less trouble just to take things "at their surface values," as we say, than to ask questions and try to pierce to the heart of them.

DO OUR EYES DECEIVE US?

You know that the answer to this question is Yes, said the Wise Man. But I said that sometimes we can learn from the deception of our senses, and I will give you an instance. Our eyes see things for a tiny fraction of a second after they are gone. If you spin a little black and white disc shown in another part of our book, you see circles instead of little bits of circles, That is because the eye goes on seeing even when the lines are not there, and sees until they come round again. So if you take a card with a gate drawn on one side, and a man on a horse on the other side, and spin it, you seem to see the horse jumping the gate.

HOW DO THE BIRDS FIND THEIR WAY?

We know that many birds fly away home over the sea to warmer countries when our summer ends, and return when it begins again. This flight across the seas is called *migration*, and is indeed one of the wonders of the world. Look at the picture on page 516. We say that *instinct* guides them; but this does not tell us how instinct is able to do so marvelous a thing. When we cross the seas we are guided by those who have been that way before. We have charts and pilots and compasses, and even then we sometimes make terrible mistakes.

But the birds have none of these things. They do not even take provisions with them; and we know that some of them become exhausted with their long flight, unsupported by food, and are drowned; whilst not a few, when they reach land, are nearly dead. Yet, though this is so, the wonder of their flight and their guidance, remains.

In order to answer this question, we

can only guess that perhaps the older birds teach the younger ones, as happens with ourselves; and if anyone finds it hard to believe how they can remember, all we can say is that birds have wonderful memories for these things. I think, also, that birds have a wonderful *sense of direction.*

We know that some people can never find their way. They turn to the left when they should turn to the right, and so on. Other people scarcely ever make a mistake, even though they have been in a place only once before.

Probably birds and many other animals are even cleverer than the cleverest human beings in this respect. Perhaps, if you bandaged a bird and "turned him round three times"—as when you play games—he would remember just how far and often he had gone round. But when they turn *you* round, you don't know whether you are facing the fireplace or the window. Your brain can't remember the turnings as the bird's brain does.

WHAT MAKES THE WATER BOIL?

I cannot answer this question, said the Wise Man, until you know what it is that forms the bubbles when water boils. I wonder whether you know that they are bubbles of water. If you hold a cold plate over boiling water you will find drops of wet water form upon it, though you can see no water passing upwards between the surface of the boiling water and the plate.

The truth is that, though we always think of water as something liquid and wet, just as we think of air as something that is always a gas, we have no right to do so. Air and water, and everything else, can exist in three different forms, either *solid*, or *liquid*, or in the form of a *gas*. Air, for instance, is usually a gas, but it is not very difficult to make air liquid, so that it looks just like water, or to make it solid, so that it looks just like ice. Water happens to be usually fluid, but we all know that when it is cold it becomes solid, ice being simply solid water; and we must now learn that, when it is hot enough, water becomes a gas just like air. Indeed, the air contains a quantity of water-gas, or water-vapor, as it is usually called, and when we find the weather close and "muggy," as we say, it is usually because there is more of this water-vapor in the air than we like. When water boils, then, the bubbles are bubbles of water-gas or water-vapor, and if this vapor strikes a cold surface like a cold plate, it becomes liquid or wet again.

One of the things that decides whether anything shall be solid or liquid, or a gas, is heat; and so, of course, the simple answer to the question, "What makes the water boil?" is *heat.* We apply heat to water, and it begins to turn into gas, which makes the bubbles.

WHERE DOES WATER GO WHEN IT BOILS AWAY?

If we go on boiling the water, of course we boil it all away as gas, until there is none left. In an ordinary way water always begins to boil when it is at a certain *temperature*, or "hotness," and this is called the boiling-point of water. It is not possible in an ordinary way to have wet water any hotter than this point, no matter how much heat you apply to it. The result will be not to make it any hotter, but simply to turn it into gas until it is all gone.

I said "in an ordinary way," because it is not difficult to make water boil without being nearly as hot as boiling water usually is. One of the things that decides the boiling-point is the pressure of the air, at the bottom of which we live. Now, if you take some water up to the top of a high mountain, the pressure of the air is much less, because there is not so much air above you. If now you heat the water, it begins to boil when it is nothing like so hot as it needs to be made before it will boil at the bottom of the mountain: because on the mountain there is less pressure of air squeezing the water, and so it can more easily expand into bubbles of gas. So if you put an egg in the water at the top of this mountain, you may boil and boil as long as you please, but you will never boil the egg hard, simply because, however long you boil, you can never make the water hot enough to make the egg hard. The water simply floats away as gas long before you can do so, and you must eat your egg nearly raw, though it may have been in boiling water for an hour! You might almost drink boiling water if you were on a very high mountain.

THE NEXT QUESTIONS BEGIN ON PAGE 607.

IN THE HEART OF THE NEW HAMPSHIRE HILLS

Here is a picture of the beautiful Crawford Notch, in the heart of the White Mountains, New Hampshire. The White Mountain region, with its healthful air and beautiful scenery, is one of the most lovely vacation spots in the United States. The government has recently purchased the belt of land which contains the Crawford Notch, and it will become a part of the great Eastern Forest Reserve. Thus it will be preserved for many years as a "thing of beauty and a joy forever" to the people of the United States. The White Mountains include some high peaks. Mt. Washington was long thought to be the highest point in the East, but Mt. Mitchell is really higher.

THE HISTORY OF THE UNITED STATES

WHEN America had been known more than a hundred years, only two small settlements, both Spanish, existed in the present United States, one at St. Augustine in Florida, and the other at Santa Fe in New Mexico, though there were settlements on Porto Rico. This was soon to be changed, for after 1600 several settlements were made only a few years apart. The English made a settlement in Virginia in 1607, and followed with another in Massachusetts in 1620. The Dutch established a trading-post on Manhattan Island before 1614. Other English settlements were soon made in the present territory of the United States, while the French at first spent all their strength in Canada.

BUILDING HOMES IN THE NEW LAND

CONTINUED FROM 403

YOU have already been told that, in the territory now making up the United States, the explorers wasted their time in seeking gold, or a short way to Asia, for more than a hundred years. At the end of these years of discovery and exploration, only two small Spanish settlements were to be found in what is now the United States proper. You have already read that there was a small Spanish fort at St. Augustine in Florida, which is, therefore, the oldest town in the United States, and another at Santa Fé, New Mexico, which is second in age. There was also a settlement or two in Porto Rico, now United States territory. Northward not a single white man had made a home, except here and there one had adopted the life of the Indians. Perhaps, too, some members of Sir Walter Raleigh's "Lost Colony of Roanoke" were still alive among the Indians somewhere in the deep forests in what is now North Carolina or Virginia.

America had been a great disappointment to all the exploring nations except Spain. That country had found treasures in Mexico and Peru, where they had made slaves of the people whom they found there. Other nations had found neither gold nor other treasures, and because America prevented them from reaching Asia, they wished that the two great continents were out of the way.

The wise Sir Walter Raleigh, about whom you have already read, had come to believe that profit might be made if men would go to live in the land and cultivate the soil, but even the colonists he sent out spent more time seeking gold and looking for a passage to Asia than they did in planting crops. So all Raleigh's money soon went and no colonies remained on the land which Queen Elizabeth had given him.

HARD TIMES IN ENGLAND MAKE PEOPLE THINK OF AMERICA

About the year 1600, people in England found it harder and harder to find work, for the following reason. The people in the Netherlands were weaving more and more woolen cloth, and they thought that English wool was better than any other. So the English land owners found that they could make more money by turning their land into pastures for sheep than they could by farming. Now a few men can take care of the sheep on a large piece of land, and men who had been working on the farms could find nothing to do. This made many people think about going to Virginia, though that country seemed very far away from England.

King James I, who had succeeded Queen Elizabeth, gave a charter, which is a paper telling of rights,

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privileges and duties, to a company, called the Virginia Company, in 1606. This company had two branches, one called the London and the other the Plymouth, because many of the men interested lived in one or the other of these towns. The charter granted to the Plymouth Company the land from about Long Island Sound to Nova Scotia; to the London Company, the land from about Cape Fear to the mouth of the Potomac River. The strip between was to belong to the company which colonized it first. All the grants reached to the Pacific Ocean, which was still thought to be only a few hundred miles from the Atlantic.

THE FIRST PERMANENT ENGLISH COLONY IN AMERICA

Both companies soon sent out colonies. We shall mention the settlement of the Plymouth Company first, though it really came second. The colony sent out settled at Sagadahoc on the Kennebec River in what is now Maine, but the next winter was very cold, they had little to eat, and the colonists quarreled so much with one another that they were all glad to go home in 1608. The story of their hardships frightened others and the Plymouth Company sent out no more settlers. The land was soon taken away from it.

When the London Company was ready, in December, 1606, it sent more than one hundred men to Virginia in three little ships called the Susan Constant, the Godspeed and the Discovery. They reached the coast in April, 1607, and sailed up a river which they called the James, and settled on a low point of land which was almost an island, about forty miles from the mouth. This they called Jamestown in honor of the king.

Misfortunes followed the colony for fifteen years. The first was that the sailors saw shining sand, which they were sure was gold along the streams and waited to load the ship with it. The shining grains were only "fool's gold," but while the sailors were staying they were eating the food brought over to feed the colonists until they could feed themselves. The place was swampy and during the hot summer fifty persons died of fever. But for one man the rest would have given up. This man was John Smith, who was a great boaster and was not always truthful, but was a strong, vigorous man who knew how to get food from the Indians, who did not like to see the white men in their country.

THE COLONISTS ENTIRELY UNFIT FOR HARD WORK

The men of the colony were not suited to the hard work of making homes in a new country. Many of them were classed as "gentlemen," which then meant people who did not know anything about work with their hands. Others had been merchants, and among them were jewelers, perfumers and the like. Only a few were accustomed to hard work. There were six carpenters, one blacksmith, one mason and a few laborers. They wasted their time hunting for gold, instead of building houses, cutting down trees and planting corn. Many of them lived in holes in the ground, for they thought if they found gold they could either go back to England or else get others to work for them. Besides, if they did work, all that they made went into one storehouse and all shared equally. Lazy men did not work because they thought that others would produce food for them.

In 1609 about five hundred more men came out, but they were of the same sort, and Captain John Smith, who was not liked by the lazy, went home to have a wound cured. Since there was not enough food for everyone, the next year they killed and ate all their animals, including their horses and dogs. In June, 1610, only about sixty were left out of nearly six hundred who had come to Virginia.

SIR THOMAS DALE AND HIS HARSH LAWS MAKE THE LAZY WORK

Finally they all got into four little boats and started to leave the country, but near the mouth of the river they met the new governor, Lord De la Warr, who was coming with supplies. From this name we get Delaware, the name of one of our states. Lord De la Warr soon went back to England and a very strong, but a very stern man, Sir Thomas Dale, came out to govern the colony, and brought more men and supplies. He punished the lazy and those who broke the laws very harshly, but he made men work. He also allowed each man to have a piece of land for himself and to keep

THE VOYAGE OF THE PILGRIM FATHERS

The men who first went to America from England were for the most part not suited to become colonists, but they were afterwards joined by men of a better class; and at last there went out colonists of a very different kind: men who were driven from England by the tyranny of King James I, who insisted that every one must worship God in a certain way. There were many people who disliked this way, and some of them thought that if they went to America they would be able to follow their own will, and worship as they pleased. As the king was pleased to be rid of them he gave them permission to go. This band, called the "Pilgrim Fathers," sailed in the Mayflower, and this picture shows them leaving.

This picture shows some of the Pilgrim Fathers after their landing in America. Not only the last port in England where the Mayflower had lain was Plymouth, but the landing-place in America had been called Plymouth by Captain John Smith. It is curious to think that Oliver Cromwell was once on the point of sailing to take up his abode in the American colonies, when an order came from the king forbidding the expedition to depart. This was the doing of King Charles; and but for it Cromwell would not have trained his Ironsides, and perhaps the Royalists might have beaten the Roundheads.

whatever he made on it. Another thing helped them. You have already read that tobacco was taken to Europe from America. The habit of using it spread, and the demand grew larger. Since there was good profit to be made from growing tobacco many industrious farmers went to Virginia to live.

Women sent over for wives for the settlers

During the first years of the colony few women came, but in 1619, ninety young women were sent over by the Company. If they married, their husbands were required to pay the expenses of the journey. They were not sold, for they had the right to marry any one they pleased, but all of them did marry very soon, and several other shiploads were sent over. Homes were now built and men no longer thought of breaking up the colony, which had now several little villages along the James River, or the streams which ran into it.

The beginning of negro slavery in America

Another important thing happened in 1619. A Dutch ship passing by stopped to buy provisions and sold the colonists twenty negroes who were needed to work in the tobacco fields. This was the beginning of negro slavery in the American colonies. Afterward it spread over them all, and continued after they became a nation. There were white slaves also in Virginia, just as there were later in other colonies. These were either criminals who were sent over and forced to work, or else they were poor persons called "redemptioners" who agreed to work for a number of years if their passage was paid to the new land. When their term of service was over their master was compelled to give them a sum of money, good clothes and sometimes a horse. Some of these men, after they were set free, became successful farmers or business men. On the other hand, some were very lazy and bad and lived like Indians.

The first legislature in America meets at Jamestown

One more very important thing happened in this year, 1619. There were now eleven little settlements, and each of them was given permission to elect two citizens to help make laws for the colony. They met in the little church at Jamestown, July 30, 1619, and that is an important date, for it is the time of the meeting of the first legislature in America.

Now that we have taken the Jamestown Colony through the hardships of its early years, let us turn to the first years of another English colony. You remember that the Plymouth Company tried to make a settlement on the coast of Maine in North Virginia, as it was then called, the same year that Jamestown was founded, but failed. After Captain John Smith left Virginia the Plymouth Company employed him to explore and make a map of their territory. This he did in 1614 and called the country New England, and by this name it is known to-day. But the Plymouth Company did not succeed in planting any colonies.

Different religious opinions in England

You will read in the chapters on the English history of the Reformation, and how under Henry VIII and his children the Pope was declared to have no more power in England, but that the English Church should be independent. Some of the people did not think that the changes made in the doctrines and the forms of worship went far enough. They said that they wished to purify the English Church and therefore they were called Puritans, but they still belonged to the Church. There were others who went further. They said that each little band who believed the same way ought to be entirely independent. At first they were also called Puritans, but commonly they were called Separatists, because they separated themselves from the English Church.

Rulers at that time did not think it safe for men to think differently about matters of religion. They thought that if men were allowed to refuse obedience to the particular Church which was established by law, they would soon disobey the law in other matters and perhaps refuse to obey their rulers in other than religious matters.

Englishmen go to Holland to have freedom of worship

Many of the Separatists escaped to the Netherlands where thy were allowed to believe as they pleased. Among them were members of a little

In this picture, by G. H. Boughton, R.A., are the new and the old inhabitants of North America. In front is a type of the Indians, so called by Columbus, who mistook America for India. They have been pushed into the West, and their places have been taken by descendants of Puritans and other immigrants.

The men and women who came over in the Mayflower soon settled down in their new home, and were followed by others who desired freedom to live and worship as they pleased. Here we see a group of Puritans going to Church across the snow. The men are armed in case of attack by hostile Indians.

William Penn was a leader of the religious people called Quakers. He was given a large tract of land in America in 1681, and he persuaded many persecuted Quakers to colonize it. It was called Pennsylvania. Penn treated the Indians well, and we see him entering into a bond of friendship with them.

congregation at Scrooby, which began to move in that wonderful year 1607. This congregation after stopping for a little while in Amsterdam removed to the city of Leyden where they worked very hard to live. But after ten years the leaders began to talk of removing to America. Work was hard, some of the young people no longer believed as their fathers did, and were growing up Dutchmen instead of Englishmen. Though they had been forced to leave England, they still loved their native land. So they planned to build a new home where they would not be disturbed. They arranged with the managers of the London Company to get land, and in 1620 left Holland in a ship called the Speedwell to go to Southampton in England, where friends were to join them in another ship called the Mayflower. When they started toward America the Speedwell was found to be leaking, and that ship went back to England. Passengers from both ships were crowded into the Mayflower.

THE PILGRIMS SET OUT TO MAKE NEW HOMES IN AMERICA

At last, the Mayflower, with a part of the congregation, set out with one hundred persons on board. The ship was crowded, the weather was bad, and they did not reach the American coast until November, 1620, when they found they were on the shores of Cape Cod instead of on the coast of what is now New Jersey, where they had permission to land. They decided to stay where they were as they thought that they could get permission from the Plymouth Company, and after exploring the coast, landed December 21st, at the place which John Smith had already called Plymouth. Later the colony did get permission to use the land from the New England Council, which succeeded the Plymouth Company, but it never had a charter from the king.

If the Virginia settlers found the summer hotter than anything they had known in England, these found the winters terrible. You must remember that they did not have close houses, furnaces, and coal with which to heat their houses. They lived in log cabins with no floors or at best with floors of logs split in half. Then too the climate seems to have been colder then than it is now. During the first winter more than half of the little company died, including the governor.

Like the Jamestown Colony they began by putting all the goods into one storehouse, for they had borrowed money to bring them over and had agreed to work together to pay the debt. But here, too, it was found that men would not work so well when each man could not have the fruit of his own labor, and the system was soon given up. They did not have any trouble about their rulers, for William Bradford, who was elected after Governor Carver died, was elected every year, except five, until his death in 1657.

THE PURITANS IN ENGLAND DECIDE TO MOVE ALSO

As the years went on, the Puritan party in the Church of England was persecuted. The bishops and the king were determined to break it up, and some of the leaders determined to go to New England as the Pilgrims had done. In 1628, they bought the right to settle on the land between the Charles and the Merrimac Rivers and the same year John Endicott led a few persons and settled at Salem. He was not a wise ruler and made many curious laws. He compelled the women to wear veils in church for fear that men might look at them and not listen to the sermon. He thought it was wrong to wear a wig and punished a man who wore one. The next year a larger party came out and in 1630 John Winthrop led nearly a thousand persons, with many cattle and horses, and made several settlements on Massachusetts Bay.

You must keep in mind the difference between the Pilgrims and the Puritans. The Pilgrims, at Plymouth, who had separated from the Church of England before they came over, were few and most of them were poor. Many of the Puritans were rich, and they did not separate from the Church until after they had arrived in America. Though in many things the Pilgrims and Puritans thought alike, they founded separate colonies which were not joined together for many years.

THE FIRST COLLEGE WHICH WAS FOUNDED BY THE PURITANS

The Bay Colony grew very rapidly, and before 1634, nearly five thousand settlers had come. They did not suffer

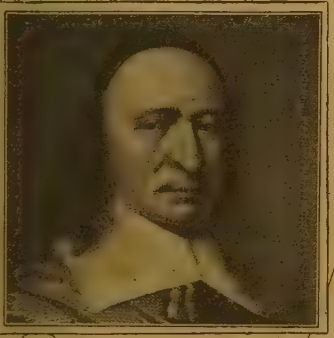
GREAT MEN IN COLONIAL DAYS

J. SMITH

CALVERT

MONK

CLARENDON



STUYVESANT

PENN

These six men had a great deal to do with the early days of the colonies. Captain John Smith saved Virginia, and explored and named New England. Lord Baltimore founded Maryland. Peter Stuyvesant was the last Dutch governor of New Amsterdam, and William Penn founded the Great state named after him. George Monk, Duke of Albemarle, was commander of the English army, and Edward Hyde, Earl of Clarendon, was one of the most powerful noblemen of his time. They helped to found Carolina.

so much, because they had more money with which to buy things in England, and they had learned from the experience of the other colonists. In 1636 they decided to start a college to train ministers for the churches. A young minister, John Harvard, died in 1638, and left his books and his money to the college, which was then called after him.

Though these Puritans had come to the new world in order to have their own way in religion, they were not willing to give the same right to others. They banished a young minister named Roger Williams, because he taught that it was not right to compel a man to support a church in which he did not believe, and that the judges had no right to punish a man because he broke the rules of the Church. Williams said also that the King of England had no right to grant the land on which they lived, because it belonged to the Indians. Williams escaped before he could be sent back to England, and took refuge among the Indians. He bought some land from them on which he began to build the town of Providence in 1636. Other persons who were driven out of Massachusetts Bay because of religion also moved southward, and their settlements, together with Providence, became the colony of Rhode Island, where every man was allowed to think, believe and teach what he pleased.

New Amsterdam founded by the Dutch on Manhattan Island

Though we jumped from Jamestown to Plymouth, another colony was founded before Plymouth. You remember that Henry Hudson in 1609 sailed up the river which now bears his name and claimed all the country near it for the Dutch. He also found that the Indians had many furs which they were willing to exchange for a few beads or a hatchet. These furs seemed as good as gold to the Dutch and they soon sent out traders to gather them. In 1614 there were a few houses on Manhattan Island. The same year or early in 1615 Fort Nassau (now Albany) was founded and settlements in New Jersey also were soon made.

The Dutch claimed all the country between the Delaware and the Hudson Rivers and called it New Netherland. In 1626 Peter Minuit, who had been sent over to oversee the traders, bought Manhattan Island from the Indians for twenty-four dollars' worth of beads and other trifles, and the town that was growing up at the foot of the island was called New Amsterdam.

Next, large tracts of land along the rivers were offered to any men who would bring over fifty settlers at their own expense. Soon there were many farms along the rivers and the owners of the tracts, who were called "patroons," lived like the English nobility and had great influence.

Lord Baltimore founds a home for his Catholic friends

George Calvert, whom King James I made Lord Baltimore, also wished to found a colony. He was a Roman Catholic and had it in his mind to build up a colony where the laws about religion should not be so strict. If he could do this, those of his religion could have peace, as they were not well treated in England. At first he tried to make a settlement in Newfoundland, but the climate was too severe. Then he persuaded King Charles I, who sympathized with the Catholics, to make him Lord Proprietor of a great tract of land north of the Potomac River. He died just as the charter was about to be granted, and it was given to his son, the second Lord Baltimore, and was called Maryland to compliment the Queen Henrietta Maria. For all this great tract of land the only rent he was to pay to the king was two Indian arrows every year, and one fifth of the gold and silver that might be found. Protestants as well as Catholics were welcomed.

The Lord Proprietor had great powers. He could coin money, grant titles of nobility, appoint judges, and pardon criminals. If he decided to call a legislature, the laws which were made did not have to be submitted to the king. In fact the Lord Proprietor was almost like a king. We shall see that other colonies, which were founded later, were governed in the same way.

The first settlement was made in 1634, and grew rapidly. But this same territory had been granted to Virginia, and the Virginians did not like to see it given to another colony. So some of them joined with those in Maryland who were not Catholics and captured

the colony. It was given back to Lord Baltimore by Oliver Cromwell, but later those who were not Catholics got control and forbade any more Catholics to come in. Finally the fourth Lord Baltimore turned Protestant, his rights were restored, and his family held control until the Revolution.

SWEDEN ALSO TRIES TO FOUND A COLONY

Just about the time that Maryland was founded, Sweden was a more powerful country than it is to-day. The great King Gustavus Adolphus hoped to found a colony in America and gave permission to some of his subjects to send out men. He died, however, before anything had been accomplished. Under his daughter Christina, who succeeded him, a few men settled on the Delaware River in 1638 and called the colony New Sweden. They were led by Peter Minuit, the first Dutch governor of New Netherlands, who had left the Dutch service. The Dutch still claimed the country and Peter Stuyvesant, the one-legged governor of New Amsterdam, was able to make them yield to his power. This was the beginning of the colony of Delaware.

THE DUTCH LOSE THEIR COLONY TO THE ENGLISH

But Governor Stuyvesant also had troubles. He was very hot-tempered, did not believe in giving the people any voice in the government, and many in New Amsterdam did not like his ways. The English claimed all of North America, because of the discoveries of Cabot, and as soon as their troubles at home were over a fleet came out in 1664 and ordered New Amsterdam to surrender. The people, who did not like Governor Stuyvesant, would not fight, and so the English took possession and called it New York in honor of the King's brother, the Duke of York, who was later to be James II of England. In 1673 the Dutch again got possession, but kept it only a few months, after which they lost their colony for ever.

THE BEGINNING OF NEW JERSEY AFTER THE CAPTURE OF NEW YORK

The Duke of York the same year granted the southern part of his province to two of his friends, Lord Berkeley and Sir George Carteret. The last named had been governor of the island of Jersey on the English coast, and so the province was named New Jersey. Settlers came from New York, New England and Old England. Among them were many Quakers. Some Quakers bought Berkeley's share, and after a time the province was divided into East Jersey and West Jersey. There were quarrels with the governor of New York, who claimed the right to rule the Jerseys, but the disputes were settled at last in favor of the Jerseys. Then William Penn and other Quakers bought Carteret's share, or East Jersey. Finally the two were again united.

Though it was not next in time we shall here tell the story of the founding of Pennsylvania. William Penn was the son of a distinguished English naval officer who was a great friend of the royal family. Very much to the disgust of his family young Penn became a Quaker, and sometimes wandered over the country preaching to all who would listen to him.

WHAT THE QUAKERS BELIEVED AND TAUGHT

The Quakers at this time were very much despised. They said that it was wrong to show respect to people because of their position and so would not take off their hats before rulers, or address them by any title, not even Mister. They said that it was wrong to wear jewelry or fine clothes or to follow the fashions. They did not believe in priests, or bishops and they refused to swear in court. They did not believe in war and would suffer any punishment rather than serve in the army.

It is said that King Charles II owed Penn's father a large amount of money which he did not want to pay. He liked Penn in spite of the fact that he was a Quaker, and so in 1681 gave him instead of the money a large tract of land lying west of the Delaware River.

RAPID GROWTH OF THE QUAKER COLONY UNDER PENN

The rules that Penn made for the settlement were very liberal. No one was to be allowed to be troubled for any matter of religion, the punishments for crime were not so harsh as they were in the New England colonies, and men could get land upon easy terms. In

STIRRING SCENES IN COLONIAL TIMES

Nathaniel Bacon raised a force to attack the Indians in Virginia, without the consent of Governor Berkeley, who became so angry that he threatened to hang Bacon.

Quakers refused to take off their hats to any man. They were persecuted in many colonies, and in some cases were put to death. Here we see the Quakers on trial.

Miles Standish was the soldier of the Plymouth colony, and had several contests with the Indians, who were forced at last to let the little colony alone.

1683, the city of Philadelphia, which means "Brotherly Love," was laid out and soon grew to be a handsome town with broad streets and brick houses. Settlers came fast to the province and it did not suffer any of the hardships which made the stories of Virginia and Plymouth so terrible. Not all of the settlers were English. Many Germans came over and many of the inhabitants of Ireland also. There were also Swedes, Welsh and French. Penn succeeded in having the Duke of York, who became James II in 1685, turn over Delaware to him, since the colony of Pennsylvania had no seacoast.

COLONIES NOW FOUNDED IN THE SOUTH

All the colonies of which we have just been reading have been on the middle or northern coast. Now we come to some further south, where three colonies were yet to be founded. As early as 1629 Charles I had granted "The province of Carolana", to Sir Robert Heath but he made no attempt at settlement. As the years went on restless men from Virginia moved southward, and here and there men from other places settled along the coast where they were under no law or government except their own will.

When Charles II was restored to his throne, in 1660, some of his friends asked him for a grant of land in America. As this gift did not cost him anything, he granted, in 1663, to eight Lords Proprietors, a strip of land three hundred and fifty miles wide south of Virginia, and extending to the Pacific Ocean. This was called Carolina. Some of the most important of these Proprietors were the Duke of Albemarle, the general of the army, the Earl of Clarendon, two of whose granddaughters became queens of England, and Lord Ashley, afterward Earl of Shaftesbury. You can see two of these on another page. In 1665 the grant was made larger, so that it included all the land in what is now north and South Carolina, Georgia and the states west of them.

The Proprietors published what we should now call advertisements for settlers, offering favorable terms, and a number took up land in Carolina, though they did not pay much attention to the Proprietors. If they liked the looks of land upon which no white man was living, they settled on it without asking any one's consent. It was easy to get enough to eat in Carolina. The waters were full of fish. Turkeys, ducks, deer and other game were plentiful and the winters were not so severe as in the north.

Settlers from Virginia occupied the coast, next to that colony, and a governor was appointed in 1664. Another settlement was soon made near the present site of Charleston, South Carolina. There was still another tiny settlement at the mouth of the Cape Fear River, but it did not last.

NOBLES, FREEMEN AND SLAVES IN A NEW COLONY

The Proprietors adopted in 1669 a very wonderful form of government for the colony, called the "Fundamental Constitutions." It provided for three ranks of nobility, freemen, and serfs who were to be little better than slaves. If a man was born a serf he must remain one all his life. The people in Carolina had been entirely free and they did not worry about this constitution, which was not even suited to England at that time and was silly in a country where there were only hunters, fishermen and small farmers.

The settlement in the south around Charleston grew faster than any in the north and finally the province was divided into North and South Carolina. The Proprietors had not started the province for religious reasons, as Lord Baltimore and William Penn had done, and when they found that they were not likely to get much profit from it, paid little attention to the people. Some of them sold their shares for small sums and were glad to get rid of the troublesome affair.

HOW THE PEOPLE OF NORTH CAROLINA TREATED SOME GOVERNORS

Most of the governors sent out were not fit to rule. Twenty in all were sent out to the northern province, and the people drove away six of them. Once for two years there was no governor or other ruler in North Carolina, but the people did not care. If there was no governor, there were no taxes to pay and that pleased them very well.

Many French Huguenots and some Germans and Swiss came over. A town was founded and called New Berne.

Before they were entirely settled the whole northern province was attacked by the Tuscarora Indians and for four years there were many battles. The Proprietors would not send aid, and for a time it seemed as if the colony would be broken up. At last with help from South Carolina the whites defeated the Indians so severely that they moved to New York and joined the Five Nations, which were afterward known as the Six Nations.

Pirates on the coast and rascals in office

The colony was at this time troubled with pirates who hid their small vessels in the rivers or in the shallow sounds and lay in wait for trading vessels. Finally the worst one, Edward Teach, who was called Blackbeard, was defeated and killed after a bloody battle.

The people were so tired of the Proprietors that they asked the King to take over the government of the colony. This he did in 1729, paying each of the Proprietors about $12,000 for his share. One of the eight refused to sell and a strip of land seventy miles wide was set off for him along the border of Virginia, but he no longer had rights of government.

A colony founded for poor men who were in debt

Just about this time the last southern colony was begun. At that time in England a man could be put in prison for debt, even if it had not been his fault, and might be kept there at his own expense until the debt was paid. General James Oglethorpe was a kind man who had been a brave soldier and a member of Parliament. He asked the King to give him some land in America to which he might take some of these men, where they could have a chance to begin life over again. In 1732 George II gave him permission to make a settlement and the colony was named Georgia in his honor.

Oglethorpe came over in 1733 and founded the town of Savannah, which soon began to grow. The colony was not a great success. Many of those who came over did not do any better in Georgia than in England and some were ungrateful. Oglethorpe went back to England and in 1752 the King took the government himself.

If you have counted the colonies as we have told about them you know that we have mentioned eleven. Of course every boy and girl knows that there were thirteen colonies at the time of the Revolution. We shall now go on to tell about the other two, though they really belong earlier.

What the founders of Massachusetts Bay believed

The founders of the Massachusetts Bay Colony wished to worship God in their own way but they did not intend to allow religious freedom, and they did not believe in the rule of the people. They thought that the elders in the churches ought to be the rulers in the colony also. Only church members were allowed to vote, and they were told that they must always vote as the ministers advised. Any one who did not believe and act as the ministers and elders told him was punished or banished from the colony.

The three towns on the Connecticut River

Each little town in Massachusetts was almost altogether settled at first by those who had known one another in England. The settlers at Newtown (now Cambridge) were under the charge of Rev. Thomas Hooker, who believed that the people ought to have more voice in the government and also that good men, even though they were not church members, ought to vote. Then too the land at Newtown was not very good. So before there was an open quarrel, he and his congregation moved in 1635 and 1636 to the Connecticut valley, where they founded the town of Hartford. The Dutch had had a small fort here, but had given it up on the approach of the English, who were also settling on the coast. The people of Dorchester moved and settled Windsor and the Watertown people settled Wethersfield about the same time. These were the "three river towns" of Connecticut. In 1639 the people of these towns met at Hartford and agreed not to be subject any longer to Massachusetts, but united into a republic to be governed by written laws which they drew up. Their land was good and the colony prospered, though they had trouble with the Indians.

Just about this time a party from England, which also wished to found a colony, settled at New Haven. They

were very strict in their ideas and at first had no law except the Bible. Later, against its will, this colony was joined to Connecticut, which had already bought a little colony at Saybrook.

THE LITTLE COLONY FURTHEST NORTH

One more colony is to be mentioned, but it was always such a weak colony that we almost overlooked it. This was New Hampshire, which was founded by Captain John Mason, who obtained a grant of land in 1629. A few settlers came, and among them were some who had been driven out of Massachusetts because of their opinions in religion. After Captain Mason died no one paid much attention to his rights and in 1641 Massachusetts took the government. It remained under that colony until 1679, when it was made a separate province.

THE GROWTH OF THE COLONIES ALREADY MENTIONED

Now let us carry forward a little the story of some of our colonies, which we left as soon as they became self-supporting. We shall not tell you very much about how our ancestors lived, for we shall have some other articles in our BOOK OF THE UNITED STATES which will describe their manners and their customs, their schools, their sports and what they thought about many things.

We left the Virginia Colony just after the three important happenings of the year 1619. There was a serious Indian war in 1623, but it could not stop the growth of the colony. The next year King James took away the charter of the Company because he thought it was too democratic, and the governors were afterward appointed by the king, who sometimes chose well and sometimes made mistakes. In 1642, one of Virginia's greatest governors, Sir William Berkeley, was sent out and held the office most of the time for the next thirty-five years.

KING CHARLES II ASKED TO BECOME KING OF VIRGINIA

After Charles I was executed in England many of his followers, called "cavaliers," came to Virginia and the colony invited the young Charles II to come over and be king of the colony. The people did not live in towns as in New England, but each man tried to get a large plantation, where he could live like a country gentleman in England. In spite of Indian troubles and an uprising of the people called Bacon's Rebellion, the colony continued to grow and kept the first place in population down to the Revolution.

WHAT FINALLY BECAME OF THE PLYMOUTH COLONY

The Plymouth Colony grew very slowly at first, for at the end of twenty years it had only three thousand people, but afterward grew faster. It did not persecute those differing in religion so bitterly as did the Bay Colony, but in 1692 was joined to that colony.

The Bay Colony grew rapidly from the beginning in spite of Indian wars, about which we shall tell in another place. The people held steadfastly to their Puritan opinions, and some returned to England to fight under Cromwell. They whipped Quakers, branded them with a hot iron and banished them from the colony.

SIR EDMUND ANDROS

Finally in 1684 the king took away the charter, and all of New England, New York and New Jersey were put under one governor, Sir Edmund Andros, in order that they might be better able to resist the Indians and the French. When James II was driven out of England, Andros was deposed. We shall tell you about the craze about witchcraft in another place.

We have already told you of Maryland, Connecticut and Rhode Island, about which there is not much more that is important to be said. In New York some of the royal governors were good and some were bad, some protected pirates and others got drunk on the streets or in common saloons. That famous pirate, Captain Kidd, was a merchant of New York before becoming a pirate. The trade of New York grew all the time, and then, as now, people of many nations were to be seen on the streets.

In the next article we are to learn how the settlements which France had been busy founding in Canada and in the Mississippi Valley, were seen to prevent further growth of the colonies of which we have spoken. That article will tell us of the struggle for the continent which did not seem large enough for both nations.

THE NEXT STORY OF THE UNITED STATES IS ON PAGE 583.

CONSTANTINE LEADING HIS TROOPS IN BATTLE

When Diocletian gave up his throne great strife soon arose in Rome as to who should be emperor, and the victor was Constantine the Great. Constantine is famous in the world for many things. He was the first emperor to accept Christianity. Diocletian had tried to destroy it; Constantine made it the State religion of the empire. He built Constantinople, a city containing many beautiful mosques and cathedrals, and here was built up a new empire, which took to itself the power of Rome when Rome's greatness passed away. Constantine's father lived in Britain as a Roman soldier, before he came to the throne, and it is said that he married the daughter of an inn-keeper, who became Constantine's mother, and who now lies in a beautiful tomb among the glorious sculptures and paintings in the palace of the Pope.

WHAT THIS STORY TELLS US

FOR 400 years after the birth of Christ Rome ruled almost all the known world, and a line of emperors, beginning with Augustus Cæsar, continued until the power of Rome passed away. Never before, or since, has the world known such remarkable rulers as the men we call the Cæsars. It was in the reign of Augustus Cæsar that Christ was born, and the Roman emperors lived through the most tremendous period of human history, when Christianity was slowly making its way among the people. It is strange that at that great time the world was under the sway of the wickedest rulers who have ever lived; but it is fine to think that the beautiful influence of Christianity spread through the earth until it became stronger than the empire of the Cæsars, which fell to nothing, while Christianity took possession of the world.

THE EMPERORS OF ROME

CONTINUED FROM PAGE 112

THE youth whom Julius Cæsar had adopted was sometimes called Cæsar and sometimes Octavius, because his real father's name was Octavius. After the slaying of the great Julius, there was long strife between the young Octavius and Mark Antony, since one or other might rule over the vast dominions of Rome, but not both.

And when at last Octavius got the better of Antony, who slew himself, a Cæsar was once more lord of the world, as we may say; for by this time the rule of Rome had spread over all the lands whose coasts are washed by the Mediterranean Sea; and kings far away in Asia, even if they did not call themselves subjects of Rome, still knew that they must obey her.

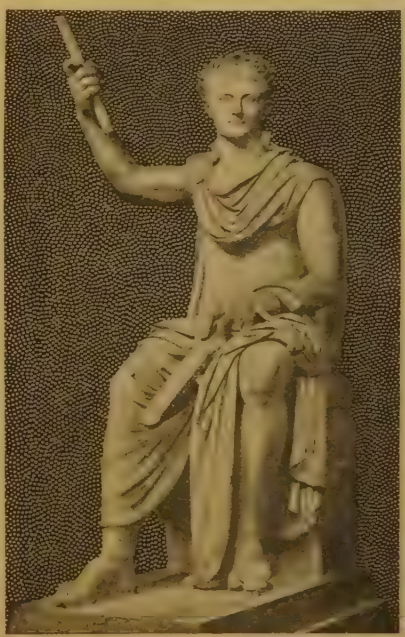
Now, would this Cæsar face the mighty task of planning ways by which that great empire might be ruled so that order and justice should prevail, and of carrying out the plans; or would he, like many another, be satisfied to make just all he could out of it for his own enjoyment and for the pleasing of his own whims and fancies?

He had been merciless, cruel, selfish. But now a change came. He took up the task; he set aside selfish aims; he learnt to curb his fierce temper; and, with the aid of wise counselors, he laid the foundations of the Roman Empire so firmly that the evil rule of some of his successors, and civil wars, and foreign foes, could not for centuries prevail to break it in pieces; and men lived under the Roman rule secure from violence, as they had lived under no other rule in the past.

Rome was a republic, and the people still hated the idea of a king; yet it was necessary that one man should be the real ruler. The difficulty was got over by giving the one man several different offices and titles. Octavius was called Augustus, the name by which he is generally known, as a compliment, very much as we say "His Majesty."

It was as if he had been made President, or Speaker of the House of Representatives, Chief Justice of the Supreme Court, President of the Senate, and moreover had charge of all religious affairs, so that he had in himself the authority of each of the chief offices of State given to him for life, though, of course, a great deal of the real work had to be done by others whom he appointed. Still, he could see that the work was properly done. But because the most necessary power of all was the control of the army, the title of Imperator, which has turned into the word Emperor, is the one which became the most familiar.

Augustus, the first Emperor of Rome, gave peace and order to the Roman world. He ordered a census to be taken, and it was while she was going up to Jerusalem for this counting of the people that Mary gave birth to our Lord.



Tiberius succeeded Augustus, whose stepson he was. He was gloomy and morose, and made his life miserable by listening to tale-bearers until he dared trust no man, even in his own house; and he died at the hands of those about his sick-bed, who probably smothered him.

So Augustus gave peace and order to the Roman world, and prosperity followed; and in his day Rome became a very splendid city, so that it was said of him that he found it built of brick, and left it built of marble. He showed favor to great poets, such as Virgil and Horace, and other great writers; so that in other countries the time when art and literature are supposed to have flourished most is called the Augustan Age. And there happened in his reign something of which he never heard, which yet changed the world more than all the statesmanship of Augustus; and that was the birth of our Lord in a far-away province.

THE DEATH OF THE EMPEROR AUGUSTUS AND THE GLOOM OF TIBERIUS

For five-and-forty years Augustus ruled, and the Roman world was well accustomed to the new order of things before he died, old and weary; for all his greatness did not bring him happiness in his home. "Have I played my part well in the comedy?" he said as he lay dying. "Then clap your hands, and so farewell." No one doubted that another emperor must succeed him, or that the successor must be his stepson, Tiberius.

Now, Tiberius was not young; he was gloomy and morose. Yet he had served the state well, commanding great armies in distant lands where other generals had met with disasters. The old emperor had respected him, but no one loved him; and it is unlucky for him that the great Roman historian Tacitus has told the story of his reign in such a way that his name has become odious to all men. Yet some people say that this is not just, and that away from Rome people could see and feel that his government was firm and wise.

But in Rome itself, and, above all, among all those people who had to do with the emperor's court, his reign was grievous. For, knowing that men did not love him, Tiberius listened readily to tale-bearers, and there grew up a foul brood of "informers" who were ready to lie away men's lives that they themselves might get rewards for their seeming loyalty. And the better a man was, the more likely was he to have wicked enemies who would charge him with plotting against the emperor, so that no man's life was safe.

THE UNHAPPY TIBERIUS AND HIS YOUNG NEPHEW GERMANICUS

With fair words crafty and evil men persuaded Tiberius to put his trust in them, and most of all a certain Sejanus, who became the captain of the guard. But a day came when certain proof was brought to Tiberius that

Sejanus himself was plotting his murder, and Sejanus in one day was smitten down from his high estate and put to a shameful death. Yet after that Tiberius durst trust no man at all, and the victims of his fears multiplied, until he, too, died, it may be of disease, or it may be by the hands of those about his sick-bed, who, as men believed, smothered him with pillows.

He had no son; but there had been a nephew of his who was called Germanicus for the fame he had won in the wars with the German barbarians. Germanicus died while quite a young man, and some fancied that he was poisoned by the emperor's device, since Tiberius feared any man who was a general favorite like Germanicus, and, above all, beloved by the soldiers.

THE MADNESS AND WICKEDNESS OF "LITTLE BOOTS," THE EMPEROR CALIGULA

However, he left a young son, whose name was Gaius; but he was called by the soldiers Caligula, which means "little boots," because when he was a tiny boy in his father's camp he used to wear little boots just like those the soldiers wore. Now Caligula, being almost a boy, was made emperor for the sake of the memory of his father, Germanicus.

But very soon after he had a serious illness, and after his illness he became quite mad, though he was still clever, so that people did not see at first that he was really mad. In his madness he thought that he was a god, and, moreover, he had a horrible delight in killing people, among many other wild fancies; so that one day he said he wished all the people in Rome had only one neck between them, so that he might cut off all their heads at once. Thus it seemed that in a few months Caligula would shed more innocent blood than ever Tiberius had spilled in his long reign, and therefore certain officers, fearing for their own lives, banded together and slew him.

Since this deed was done without warning, none knew who should now be made emperor, or whether there would be a new emperor; and it seemed that for a time all law and order were over; but the soldiers of the guard resolved to show their own power, and began to pillage the palace.

HOW THE TREMBLING CLAUDIUS HID BEHIND A CURTAIN IN THE PALACE

While they were pillaging, one saw the feet of a man who was hiding behind a curtain. The soldiers pulled him out, and when they saw that it was one Claudius, the uncle of Caligula, but a feeble man and of no account, they cried out, mocking, that he should be

Caligula succeeded Tiberius, whose great-nephew he was. He became emperor when quite young and after an illness went mad. He was cruel, and all Rome was glad when he was slain.

After Caligula's death, someone saw a man hiding behind a curtain. Soldiers pulled him out and found it was Claudius. They carried him off and made him emperor. He was a great coward and half mad, and Shakespeare is said to have studied him when writing "Hamlet."

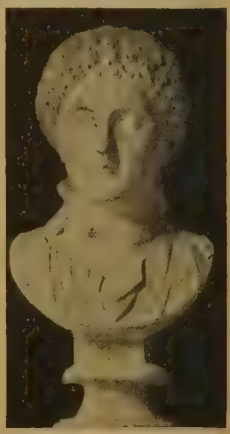
the new emperor, and carried him off to the camp. And since none could command the guard, Claudius was proclaimed emperor.

Now, he was not bloodthirsty like Caligula, loving rather books and learning of a kind that active men often despise; but Rome was ruled by his servants, and by his evil wife, Messalina. She was so wicked that when Claudius found out her wickedness he put her to death; yet he married another wife, Agrippina, the sister of Caligula, who was no less wicked, and she ruled in place of Messalina. So that all through his reign Claudius, without meaning to do evil, was persuaded by his bad counselors to shed nearly as much

NERO'S WIFE

THE CRUEL EMPEROR NERO

NERO'S MOTHER



Nero succeeded Claudius, whose stepson he was. Claudius was poisoned by his wife to make room for Nero, and Nero murdered her. Nero is shown here twice, with his mother on one side and his wife on the other. He murdered them both. He built himself a house of gold, and it is said that he set Rome on fire and harped while it burned. At last he fled from Rome in terror, and slew himself.

innocent blood as those who had gone before him. But this we may remember, that it was in his time that the Romans really conquered the island of Britain, and made it a part of the Roman Empire. At last, however, his wife, Agrippina, poisoned him, that she might make her son, Nero, emperor in his place, for she had been married and had a son before she became the wife of Claudius.

There was no one whom the soldiers cared to make emperor except Nero, so it was he who followed Claudius; and at first, while he was quite young, he allowed his tutor, the wise Seneca, and the grave Burrhus, the captain of the guard, to rule well enough; while he spent his own time in studying art and music till he came to fancy himself a wonderful artist and musician. But presently he was not contented with that, and showed himself the most cruel and bloodthirsty of all the emperors, so that his name is a by-word to this day.

First of all he had his own mother murdered, but that vile crime was forgiven him because she had been so evil a woman. There was a great fire which burnt down half the city of Rome, and men said that this was his own doing, and that while the flames raged he sang and played upon his harp the song of the burning of Troy. But, fearing the rage of the people, he pretended that it was the Christians who had done this thing, and many of them were hunted out and burnt to death or flung to the lions in the great amphitheatre to amuse the populace. Yet the world was less shocked by his cruelties than by what it deemed the shame of the Roman emperor appearing on the stage.

So many such deeds he wrought, so many noble men and women were his victims, that they cannot be recounted; but at last news came that a general named Galba, in Spain, had revolted. And when men knew that someone had ventured to rise up against him, there were none who would stand by the cruel tyrant; the guards themselves deserted the emperor. In terror he fled; but when he knew that his hiding-place was found, he dared rather to die by his own hand than to fall into the hands

of his foes—pitied by none save himself. His last thought and his last words were that the world was losing a wonderful artist.

Now in quick succession three men claimed the empire. First the old soldier Galba, with his legions from Spain; then a young man named Otho, chosen by the guard at Rome, who overthrew Galba; then the glutton Vitellius, chosen by the armies in Germany, whose troops overthrew Otho. But then there came one stronger than any of these, the skilled general Vespasian, who commanded the Roman armies in the East. For it was clear enough that none but a conquering soldier could now grasp the imperial sceptre.

Vespasian, a skilled warrior, made himself emperor and ruled the empire well for ten years, following three short reigns after Nero's death.

Vespasian and the two sons who ruled after him are called the Flavian emperors, because the family name was Flavius. Vespasian was of no high birth; but he gave Rome what she most needed at the time—a chief who meant to restore order and good government, who had no thirst for blood, and did not care to waste on display and luxury the money that was needed for more useful things. So when once he had crushed resistance to his rule, there was no more violence and bloodshed. The soldiers were glad enough to have a real soldier at the head of affairs again, and though men laughed at his manners, which were homely and even vulgar, he cared nothing about that, nor for jests at his eagerness to get money. The money was needed, and if he got it by sordid and unsavory means, he met reproaches by saying that "the coins smelt well enough"; and it was well spent. So the ten years of his rule were good for Rome.

After him his son Titus reigned only for a short time. He had won fame before as a soldier, during his father's rule, by the great siege of Jerusalem, which had rebelled; and when he conquered it he dealt with it very mercilessly, laying it in ruins, and carrying away the treasures of the Temple to Rome. But when he became emperor he was resolved to win fame for kindness and mercy, so that when a day passed on which he had set no wrong right and relieved no distress, he said to those about him, "My friends, I have lost a day." This was so unlike what people had expected of him that some think that if he had not died young he would again have shown the cruelty of his earlier life.

That is what his brother Domitian, who succeeded him, did. He began his reign well enough, but presently turned to evil ways after the manner of Tiberius, persecuting the Christians amongst his other ill-deeds; nor can good be said of his rule, except that in Britain the famous Agricola won much honor by his just government. Thus it was that when Domitian, in his turn, was murdered, there was none to mourn for him.

For more than a hundred years after Vespasian made himself emperor, Domitian was the only one of all the emperors who was not counted among the good princes; and the five who came after Domitian are often called "five good emperors." The first, indeed, whose name was Nerva, hardly counts. He was an old man already when the Senate offered him the throne—the soldiers made no disturbance—and his rule was very short. But just as Julius Cæsar adopted the young Octavius as his son, so Nerva adopted as his son a great soldier, Trajan, who was trusted by the army; and thus it was made certain that Trajan would be emperor after him. Trajan was one of the very best—a man who sought, above all things, to spread justice among his subjects. Moreover, Trajan was a great warrior, more at

Titus succeeded Vespasian, whose son he was. He destroyed Jerusalem, but when he became emperor he was kind and merciful, and whenever a day passed without a good deed done he would say, "My friends, I have lost a day."

Trajan enlarged the empire until Rome could not rule it; so that, although Trajan won great victories, the wars which ended his reign were a failure, and he died amid foes on every side.

home in the camp than in the court, and waged successful wars with the barbarian tribes in Dacia beyond the River Danube, which wars were recorded upon a great column that was set up in Rome, and was called Trajan's column.

How Trajan Enlarged the Empire Until Rome Could Not Manage It

Now, there was one thing Trajan did which was not wise, for he sought to enlarge the borders of the Roman Empire, and to carry its sway as far into Asia as Alexander the Great had gone. Yet the empire was already so vast that it was hard enough to keep armies in all its borders and hold in check the barbarians who lived beyond. So, although Trajan went to the East, and defeated the armies which met him in battle, the wars which ended his reign were a failure, and when he died there were dangerous foes rising up against the empire on every side.

However, he had made choice of a wise and able general and statesman to succeed him as emperor. No one opposed the accession of Hadrian, who, at the time, was in command of the army in the East. But he had already seen the mistake Trajan was making at the end of his reign. So the first thing he did was to make peace with the border nations, fixing the bounds of the empire where they had been before, though he took care to let everyone see that his armies were going to be just as strong as before. Then he went back to Italy, and devoted himself to making the good arrangements for government which Trajan had made still better.

Hadrian, Who Traveled Throughout the Empire and Went to Britain

But the most remarkable thing he did was that, although traveling was no easy matter in those days, when men had to go from place to place either on foot or on horseback, or perhaps carried in a litter, he traveled over the Roman Empire, and saw with his own eyes how each part of it was governed; and he even went to Britian, and built there a famous rampart between England and Scotland, which is called Hadrians's Wall to this day. It is a pity that at the end of his life he suffered from a disease which often made him lose his self-control and do cruel things. For there are many people who think that there was no emperor who did so much as he to establish the security and the strength of the empire, and the justice of the Roman rule.

Though Hadrian made the task of ruling easier for his successors, yet the task could never be a light one; and it was well that

the two who followed him were both wise and resolute, for they were also both of them men who would rather have chosen to live virtuous and untroubled lives as private citizens than to bear the burden of rule. The first was Titus Aurelius Antoninus, surnamed Pius for his virtue, whom Hadrian had chosen. In his reign the Roman governor ruled over a part of Scotland as well as England, and a new rampart was raised across Scotland, which is called the Wall of Antonine. He adopted as a son, to help him and afterwards to succeed him, the famous Marcus Aurelius.

Hadrian, who succeeded Trajan, brought back the peace that Trajan took away. He traveled over the Roman Empire and saw how it was governed, and he even went to Britain, which the Romans ruled then, and built a wall across it, some remains of which can still be seen.

MARCUS AURELIUS, THE EMPEROR WHO WROTE A BOOK THAT WE CAN BUY TO-DAY

These two great Antonines are reckoned for all time as the type of noble princes, since their care was altogether for the people over whom they ruled, and not at all for themselves. This is true, although Marcus Aurelius dealt hardly with the Christians and persecuted them, because it seemed to him, having no knowledge of the truth of their doctrine, that they were teaching men to defy the law and to be impious. Yet he wrote a book of "Meditations" which people love and treasure even now, being so full of wise thoughts and noble counsel, although he knew nothing of the hopes of the Christian Faith.

It is strange, too, to think that he wrote much of this wise book while he was in camp at the head of armies in wild regions, whose fierce border tribes were again rising up to do battle against the might of Rome; for though Marcus Aurelius loved peace, he showed himself a skilled leader in war. And when he died all men mourned for him. Yet he, too, made one unhappy blunder, for he named to succeed him his son Commodus who was almost as bad as his father was good.

Antoninus Pius succeeded Hadrian, who chose him to rule over Rome. He was a good ruler.

THE TYRANT DIOCLETIAN, WHO TRIED TO DESTROY CHRISTIANITY

Now, during the next hundred years there were a great many emperors, some of whom reigned for no more than a few months or even weeks. Only two or three reigned for so long as ten years. For whenever an emperor died—and a good many were murdered—two or three generals were usually proclaimed emperor by the troops in that part of the empire where they were in command. But at the end of a century a soldier named Diocles, who changed his name to Diocletian, succeeded in making himself emperor, and from his time there was no more pretence that the government of Rome was really a republic in which a man happened to hold a number of important offices all at

once, but it might almost be said that the emperor's will was law. Now, Diocletian is also famous for this—that he was the last of the emperors who tried hard to destroy Christianity, because by this time the Christian community had become large and powerful enough to sway the minds of men; so that the persecution under Diocletian was the worst the Christians ever endured. Yet he could in no wise crush them.

Now, when Diocletian thought that his work for Rome was completed he resigned his power; but the plan he had made to provide for the choice of his successors failed. And so there was strife again between the masters of the different quarters of the empire, each fearing that unless he made himself chief of all he would lose his own rulership. And in this strife the victor was he whom we call Constantine the Great; and the battle in which he overthrew his chief rival is called the battle of the Milvian Bridge, and the victory of the Milvian Bridge was also the victory of Christianity. For Constantine had already shown goodwill to the Christians; and before the battle, as he related himself, he thought he saw a vision—the vision of the Cross, and over the Cross words which mean: "Under this standard thou shalt be victorious." From that day he took the Cross for his standard; and, having become emperor, he gave honor to the Christian Faith, and made it the State religion of the Roman Empire, so that the State was no longer hostile to the Christian Church. And this also Constantine did—he made the city of Byzantium the chief city of the empire in place of Rome, and gave it the name of Constantinople. After his time it was the Byzantine Empire that ruled what we call the Roman world, till the West broke from the East; and thenceforth the might of Rome was not the might of the State, but the might of the Church.

Marcus Aurelius was one of the wisest and gentlest Emperors of Rome, and we can buy to-day a book of wise thoughts that he wrote while in camp at the head of armies doing battle against Rome's foes.

THE NEXT STORY OF MEN AND WOMEN IS ON PAGE 599.

Diocletian was the last of the emperors who tried to destroy Christianity. He gave up his throne and built himself the greatest palace in the world, part of which is seen here. Its walls still stand, and within them stands the town of Spalato, on the coast of Dalmatia. It is wonderful to walk about the streets of this old town and think that 1500 years ago it was the private house of a private man.

THE USES OF POETRY

IT is a curious thing that so many people seem to think it is not worth their while to read poetry. They tell us that they "cannot" read it. That is because they have never tried seriously. But it is well worth the trying; and as we should grow up with a real love for poetry, we state here very briefly what are its chief uses. Poetry is the music of the universe; it stirs our feelings and fills our minds with beautiful pictures, so that if we do not learn to love and understand it we are missing something that adds greatly to the pleasure of life.

WHY SHOULD WE READ POETRY?

CONTINUED FROM 480

WE might as well ask why birds should sing as why we should read poetry. It is natural that all people with any feeling for music should love to read poetry. When children, we are more natural in our tastes than later in life, and the taste for poetry is as natural as the liking for sweet sounds, the scent of flowers and the colors of the sunset.

Poetry expresses all these delights of nature better than any other means we have for expressing them. It is splendid to see a grand sunset; it is fine to be able to look on a great artist's picture of a sunset; but it is better—far better—to be able to remember all our lives the glorious words of some great poet who has described a sunset. Merely by recalling his magic words the joy we first felt in looking on this beautiful effect of nature arises in us as fresh as ever—it is ours for ever!

Surely this is a great thing that poetry can do. And people who do not keep the love of poetry in their hearts as they grow up lose one of the truest pleasures of life.

The writers of good poetry are few, and nothing is more foolish than to think, because we can make words rhyme with others, we can write verse. But everybody is capable of reading, enjoying, and profiting by good poetry. Therefore, we should not lose the taste for reading verses, which most of us have when we are young, but ought carefully to improve and strengthen that taste by reading as regularly as possible the works of the poets.

We have already said that poetry is the music of words; but it is more than that. It is the music of the universe. In the whole vast and wondrous world of created things there is a harmony of beauty that is felt by the true poet, and by him conveyed to the ordinary man.

A poet once said of great poets that they had "mountain minds," and their heads were sunned before the rest of men. If we saw a range of mountains in the early morning, as the sun was rising, we should see the taller peaks shining first in the sunlight. So it is with the great poets. Hence, when the great poets write their poems for us, they are enabling us to see into the heart of nature with something of their own keen insight. They lend us their eyes, so to speak. But they lend us their hearts also, for their poems express the feelings of their hearts far more warmly and clearly than these could ever be expressed in ordinary prose writing. There is no better education than to share with the greatest minds that have lived in this world of ours their feelings, their hopes and sorrows, their joys; and poetry enables us to do this.

Yes, blessings many times on all the sweet souls who have expressed themselves in poetry, and so may be said to live for ever as the companions of our peaceful hours. They are our best friends, if we but turn to them; be it for noble words to refresh us in our hours of doubt and darkness; for fine pictures of the glories of the world to enlarge our love of its Creator; or for inspiring thoughts that urge us forward in the battle of life.

WHO CAN THIS SOMEBODY BE?

Somebody crawls into mamma's bed
Just at the break of day,
Snuggles up close and whispers loud,
"Somebody's come to stay!"
Somebody rushes thro' the house,
Never once shuts a door,
Scatters his playthings all around
Over the nurs'ry floor.

Climbs on the fence and tears his clothes—
Never a bit cares he,
Swings on the gate and makes mud pies—
Who can somebody be?
Somebody looks with roguish eyes
Up through his tangled hair,
"Somebody's me," says he, "but then
Somebody doesn't care."

THE BATTLE OF BLENHEIM

The great battle of Blenheim, a town on the River Danube, was fought on August 13th, 1704, Marlborough commanding the English army allied with the Germans against the French and Bavarians. It was "a famous victory," but 37,000 lives were lost. The poem was written by Robert Southey, who was made Poet Laureate of England in 1813, though we cannot call him a great poet. By means of a very simple talk between an old man and a little boy and girl, who had found the skull of one of the slain soldiers a hundred years after the battle, the poet shows us what a terrible curse is war.

IT was a summer evening,
Old Kaspar's work was done,
And he before his cottage door
Was sitting in the sun;
And by him sported on the green
His little grandchild, Wilhelmine.

She saw her brother Peterkin
Roll something large and round,
Which he beside the rivulet
In playing there had found.
He came to ask what he had found,
That was so large, and smooth, and round.

Old Kaspar took it from the boy,
Who stood expectant by;
And then the old man shook his head
And with a natural sigh—
"'Tis some poor fellow's skull," said he,
"Who fell in the great victory.

"I find them in my garden, for
There's many here about;
And often when I go to plough
The ploughshare turns them out;
For many thousand men," said he,
"Were slain in that great victory."

"Now tell us what 'twas all about,"
Young Peterkin he cries,
And little Wilhelmine looks up
With wonder-waiting eyes.
"Now tell us all about the war,
And what they fought each other for."

"It was the English," Kaspar cried,
"Who put the French to rout;
But what they fought each other for
I could not well make out.
But everybody said," quoth he,
"That 'twas a famous victory.

"My father lived at Blenheim then,
Yon little stream hard by;
They burn'd his dwelling to the ground,
And he was forced to fly:
So with his wife and child he fled,
Nor had he where to rest his head.

"With fire and sword the country round
Was wasted far and wide;
And many a childing mother then
And new-born baby died:
But things like that, you know, must be
At every famous victory.

"They say it was a shocking sight
After the field was won;
For many thousand bodies here
Lay rotting in the sun:
But things like that, you know, must be
After a famous victory.

"Great praise the Duke of Marlbro' won
And our good Prince Eugene."
"Why, 'twas a very wicked thing!"
Said little Wilhelmine.
"Nay, nay, my little girl," quoth he,
"It was a famous victory!

"And everybody praised the Duke
Who this great fight did win."
"But what good came of it at last?"
Quoth little Peterkin.
"Why, that I cannot tell," said he,
"But 'twas a famous victory."

"'Tis some poor fellow's skull," he said, "Who fell in that great victory."

FATHER WILLIAM

Robert Southey, in writing this poem, sought to illustrate the blessings of living a sober, industrious, virtuous life. He makes Youth ask of Age the way to live, and this is the only wise course. We should profit by the experience of those who have traveled the road of life before us.

"YOU are old, Father William," the young man cried,
"The few locks that are left you are grey;
You are hale, Father William, a hearty old man;
Now tell me the reason, I pray."

"In the days of my youth," Father William replied,
"I remembered that youth would fly fast;
And abused not my health and my vigour at first
That I never might need them at last."

"You are old, Father William," the young man cried,
"And pleasures with youth pass away;
And yet you lament not the days that are gone;
Now tell me the reason, I pray."

"In the days of my youth," Father William replied,
"I remembered that youth could not last;
I thought of the future, whatever I did,
That I never might grieve for the past."

"You are old, Father William," the young man cried,
"And life must be hastening away;
You are cheerful, and love to converse upon death;
Now tell me the reason, I pray."

"I am cheerful, young man," Father William replied;
"Let the cause thy attention engage:
In the days of my youth I remembered my God,
And He hath not forgotten my age!"

THE LITTLE BUSY BEE

We cannot call this good poetry, nor can it be said to be remarkable for beauty of thought. But there is a certain quaintness of expression and simple truth in the verses, which were favorites with our forefathers. The writer was Dr. Isaac Watts.

HOW doth the little busy bee
Improve each shining hour,
And gather honey all the day
From every opening flow'r!

How skilfully she builds her cell!
How neat she spreads the wax!
And labours hard to store it well
With the sweet food she makes.

In works of labour or of skill,
I would be busy too;
For Satan finds some mischief still
For idle hands to do.

In books, or work, or healthful play,
Let my first years be past,
That I may give for ev'ry day,
Some good account at last.

A PSALM OF LIFE

A psalm is a song of praise or thankfulness. This noble poem, by Longfellow, is full of thanks to God for the good gifts of life. It counsels each one of us to do our best to-day, not to dream of to-morrow or to mourn for the past. "Let the dead Past bury its dead," means that we must resolutely turn our back on the past, do the duties that call us to-day, and march breast forward "with a heart for any fate."

TELL me not, in mournful numbers,
Life is but an empty dream!
For the soul is dead that slumbers,
And things are not what they seem.

Life is real! Life is earnest!
And the grave is not its goal;
"Dust thou art, to dust returnest,"
Was not spoken of the soul.

Not enjoyment, and not sorrow,
Is our destined end or way;
But to act, that each to-morrow
Finds us farther than to-day.

Art is long, and Time is fleeting,
And our hearts, though stout and brave,
Still, like muffled drums, are beating
Funeral marches to the grave.

In the world's broad field of battle,
In the bivouac of Life,
Be not like dumb, driven cattle!
Be a hero in the strife!

Trust no future, howe'er pleasant!
Let the dead Past bury its dead!
Act—act in the living Present!
Heart within, and God o'erhead!

Lives of great men all remind us
We can make our lives sublime,
And, departing, leave behind us
Footprints on the sands of time—

Footprints, that perhaps another,
Sailing o'er life's solemn main,
A forlorn and shipwrecked brother,
Seeing, shall take heart again.

Let us, then, be up and doing,
With a heart for any fate;
Still achieving, still pursuing,
Learn to labour and to wait.

THE MINSTREL BOY

Thomas Moore, the writer of this famous song, was an Irish poet, born in 1779, and died in 1852. He was a great favorite in his day, and published "Lalla Rookh," his most famous work, two years after the battle of Waterloo. "The Land of Song," mentioned in the following, means Ireland.

THE minstrel boy to the war has gone,
In the ranks of death you'll find him;
His father's sword he has girded on,
And his wild harp slung behind him.
"Land of song!" said the warrior bard,
"Though all the world betrays thee;
One sword, at least, thy rights shall guard,
One faithful harp shall praise thee!"

The minstrel fell, but the foeman's chain
Could not bring his proud soul under;
The harp he loved ne'er spoke again,
For he tore its chords asunder;
And said: "No chains shall sully thee,
Thou soul of love and bravery!
Thy songs were made for the pure and free,
They shall never sound in slavery!"

A CHILD'S EVENING PRAYER

The great poet knows the moods and minds of all ages, and can be as simple as a little child or as wise as the wisest scholar. Samuel Taylor Coleridge was a great poet, and here we see him uttering the thoughts of a little child in words which are beautiful in their simplicity.

ERE on my bed my limbs I lay,
God grant me grace my prayers to say!
O God, preserve my mother dear
In health and strength for many a year.
And O preserve my father too,
And may I pay him reverence due;
And may I my best thoughts employ
To be my parents' hope and joy!
And O preserve my brothers both
From evil doings and from sloth,
And may we always love each other,
Our friends, our father, and our mother!
And still, O Lord, to me impart
An innocent and grateful heart,
That after my last sleep I may
Awake to Thy eternal day. Amen.

THE FAIRIES

Written by William Allingham, who died in 1889. this is one of the most beautiful poems about fairies. Grown-up people used to believe in fairies, and in Ireland, not so very long ago, grown-ups would talk about fairies just as children do, so that Allingham, who, though his parents were English, was born in Ireland, no doubt got to know and love the "wee folk" by living in Ireland.

UP the airy mountain,
Down the rushy glen,
We daren't go a-hunting,
For fear of little men;
Wee folk, good folk,
Trooping all together;
Green jacket, red cap,
And white owl's feather!

Down along the rocky shore
Some make their home,
They live on crispy pancakes
Of yellow tide-foam;
Some in the reeds
Of the black mountain-lake,
With frogs for their watch-dogs,
All night awake.

High on the hill-top
The old King sits;
He is now so old and gray,
He's nigh lost his wits.
With a bridge of white mist
Columbkill he crosses,
On his stately journeys
From Slievelegue to Rosses;
Or going up with music
On cold starry nights,
To sup with the Queen
Of the gay Northern Lights.

They stole little Bridget
For seven years long;
When she came down again,
Her friends were all gone.
They took her lightly back,
Between the night and morrow;
They thought that she was fast asleep,
But she was dead with sorrow.
They have kept her ever since
Deep within the lake,
On a bed of flag-leaves,
Watching till she wake.

By the craggy hill-side,
Through the mosses bare,
They have planted thorn-trees
For pleasure here and there.
Is any man so daring
As dig them up in spite,
He shall find their sharpest thorns
In his bed at night.

Up the airy mountain,
Down the rushy glen,
We daren't go a-hunting,
For fear of little men;
Wee folk, good folk,
Trooping all together;
Green jacket, red cap,
And white owl's feather!

COLUMBUS[1]

This poem with its wonderful watchword of endurance, "Sail on! sail on!" is one of our greatest American poems. The unconquerable spirit of the discoverer of our land has become the watchword of the Republic.

BEHIND him lay the gray Azores,
Behind the gates of Hercules;
Before him not the ghost of shores,
Before him only shoreless seas.
The good mate said: "Now must we pray,
For lo! the very stars are gone;
Speak, Admiral, what shall I say?"
"Why say, sail on! and on!"

"My men grow mut'nous day by day;
My men grow ghastly wan and weak."
The stout mate thought of his swarthy cheek.
"What shall I say, brave Admiral,
If we sight naught but seas at dawn?"
"Why, you shall say at break of day:
'Sail on! sail on! and on!'"

They sailed, and sailed, as winds might blow,
Until at last the blanch'd mate said:
"Why, now, not even God would know
Should I and all my men fall dead.
These very winds forget their way,
For God from these dread seas is gone.
Now speak, brave Admiral, and say—"
He said: "Sail on! and on!"

They sailed, they sailed, then spoke his mate:
"This mad sea shows his teeth to-night,
He curls his lip, he lies in wait,
With lifted teeth as if to bite!
Brave Admiral, say but one word;
What shall we do when hope is gone?"
The words leaped as a leaping sword:
"Sail on! sail on! and on!"

Then, pale, and worn, he kept his deck,
And thro' the darkness peered that night.
Ah, darkest night! and then a speck—
A light! a light! a light! a light!
It grew—a star-lit flag unfurled!
It grew to be Time's burst of dawn.
He gained a world! he gave that world
Its watch-word: "On! and on!"

[1]Copyright, 1897, by the Whitaker & Ray Co., San Francisco, publishers of Joaquin Miller's Poems.

THE TWENTY-THIRD PSALM

The Psalms of David in the Bible are among the finest poetry we can read. Many of the other books in the Bible are also poetic in form, but we do not usually think of them as poems. They are not in verse. More than two hundred years ago, a Poet Laureate, named Nahum Tate, re-wrote them with rhyme, and his verses are still sung; but he was a poor poet. Joseph Addison was a far greater man, and the 23rd Psalm here given was turned into verse by him.

THE Lord my pasture shall prepare,
And feed me with a shepherd's care;
His presence shall my want supply,
And guard me with a watchful eye;
My noonday walks He shall attend,
And all my midnight hours defend.

When in the sultry glebe I faint,
Or on the thirsty mountains pant,
To fertile vales, and dewy meads,
My weary, wandering steps He leads,
Where peaceful rivers, soft and slow,
Amid the verdant landscape flow.

Though in the paths of death I tread,
With gloomy horror overspread,
My steadfast heart shall fear no ill,
For Thou, O Lord, art with me still:
Thy friendly crook shall give me aid,
And guide me through the dreadful shade.

Though in a bare and rugged way,
Through devious lonely wilds I stray,
Thy bounty shall my pains beguile;
The barren wilderness shall smile,
With sudden greens and herbage crown'd,
And streams shall murmur all around.

RULE, BRITANNIA!

This famous song, which is known wherever the British flag waves, was first sung in the year 1740, in a little play, or masque, performed before the Prince and Princess of Wales of that time. As the masque was written by two Scottish poets, named James Thomson and David Mallet, the song has been claimed for both; but it is usually thought that James Thomson, who was a good poet, if not a great one, was the author. "Rule, Britannia!" is not the finest poetry, but it is full of pride and the spirit which has made England one of the greatest of nations.

WHEN Britain first, at Heaven's command,
Arose from out the azure main,
This was the charter of her land,
And guardian angels sung the strain:
Rule, Britannia! Britannia rules the waves!
Britons never shall be slaves.

The nations not so blest as thee,
Must in their turn to tyrants fall;
Whilst thou shalt flourish, great and free,
The dread and envy of them all.

Still more majestic shalt thou rise,
More dreadful from each foreign stroke;
As the loud blast that tears the skies
Serves but to root thy native oak.

Thee haughty tyrants ne'er shall tame;
All their attempts to bend thee down
Will but arouse thy generous flame,
And work their woe and thy renown.

To thee belongs the rural reign;
Thy cities shall with commerce shine;
All thine shall be the subject main,
And every shore it circles thine.

The Muses, still with freedom found,
Shall to thy happy coast repair;
Blest Isle, with matchless beauty crown'd,
And manly hearts to guard the fair.
Rule, Britannia! Britannia rules the waves!
Britons never shall be slaves.

A CHILD'S THOUGHT OF GOD

Elizabeth Barrett Browning, the author of these beautiful verses, was a great poetess and the wife of Robert Browning, a great poet. Her pure and simple mind enabled her to see things with the clearness of a child's faith, and her power of words to express herself in noble poetry. Here she gives a wonderful idea of God's constant care and watchfulness over those of us who seek to do His will.

THEY say that God lives very high!
But if you look above the pines
You cannot see our God. And why?

And if you dig down in the mines
You never see Him in the gold,
Though from Him all that's glory shines.

God is so good, He wears a fold
Of heaven and earth across His face—
Like secrets kept, for love untold.

But still I feel that His embrace
Slides down by thrills, through all things made,
Through sight and sound of every place:

As if my tender mother laid
On my shut lids her kisses' pressure,
Half waking me at night and said:
"Who kissed you through the dark, dear guesser?"

BABY

George Macdonald, who wrote this little poem about the wonder of baby's first appearance, was a famous writer of stories, but loved best of all to make poems about childhood, and we shall have to take other flowers from him on our way through the garden of English poetry. It is printed by permission of the publishers, Messrs. Chatto & Windus.

WHERE did you come from, baby dear?
Out of the Everywhere into here.

Where did you get those eyes so blue?
Out of the sky as I came through.

What makes the light in them sparkle and spin?
Some of the starry twinkles left in.

Where did you get that little tear?
I found it waiting when I got here.

What makes your forehead so smooth and high?
A soft hand stroked it as I went by.

What makes your cheek like a warm white rose?
I saw something better than any one knows.

Whence that three-cornered smile of bliss?
Three angels gave me at once a kiss.

Where did you get this pearly ear?
God spoke, and it came out to hear.

Where did you get those arms and hands?
Love made itself into bonds and bands.

Feet, whence did you come, you darling things?
From the same box as the cherub's wings.

How did they all just come to be you?
God thought about me, and so I grew.

But how did you come to us, you dear?
God thought about you, and so I am here.

THE FOX AND HIS WIFE, THEY HAD A GREAT STRIFE

The fox and his wife, they had a great strife,
They never eat mustard in all their whole life;
They eat their meat without fork or knife,
And long to be picking a bone, e-ho!

The fox jumped up on a moonlight night;
The stars they were shining, and all things bright;
"Oh, ho!" said the fox, "it's a very fine night
For me to go through the town, e-ho!"

The fox when he came to the yonder stile,
He lifted his lugs and he listened awhile!
"Oh, oh," said the fox, "it's but a short mile
From this unto yonder wee town, e-ho!"

The fox when he came to the farmer's gate,
Who should he see but a farmer's drake;
"I love you well for your master's sake,
And long to be picking your bone, e-ho!"

The grey goose she ran round the haystack,
"Oh, oh!" said the fox, "you are very fat;
You'll grease my beard and ride on my back
From this into yonder wee town, e-ho!"

Old Gammer Hipple-hopple hopped out of bed,
She opened her casement, and popped out her head;
"Oh, husband, oh, husband, the grey goose is dead,
And the fox is gone through the town, oh!"

Then the old man got up in his red cap,
And swore he would catch the fox in a trap;
But the fox was too cunning, and gave him the slip,
And ran through the town, the town, oh!

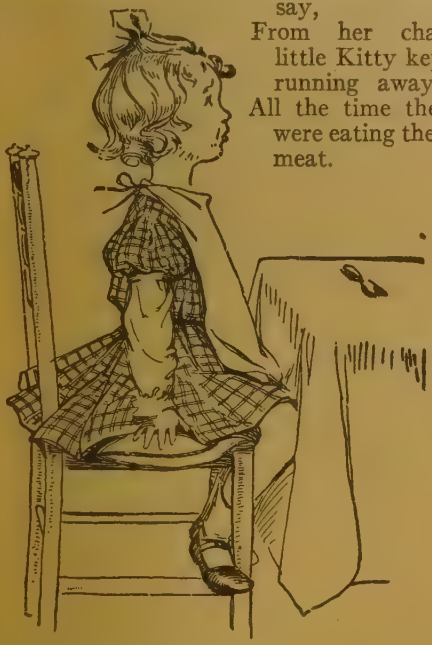
When he got up to the top of the hill,
He blew his trumpet both loud and shrill,
For joy that he was safe
Through the town, oh!

When the fox came back to his den,
He had young ones both nine and ten,
"You're welcome home, daddy, you may go again,
If you bring us such nice meat
From the town, oh!"

LITTLE VERSES FOR VERY LITTLE PEOPLE

LITTLE Polly Flinders,
Sat among the cinders,
Warming her pretty little toes;
Her mother came and caught her,
And whipped her little daughter
For spoiling her nice new clothes.

MISS KITTY was rude at the table one day,
And would not sit still on her seat;
Regardless of all that her mother could say,
From her chair little Kitty kept running away
All the time they were eating their meat.



As soon as she saw that the beef was removed,
She ran to her chair in great haste;
But her mother such giddy behavior reproved
By sending away the sweet pudding she loved,
Without giving Kitty one taste.

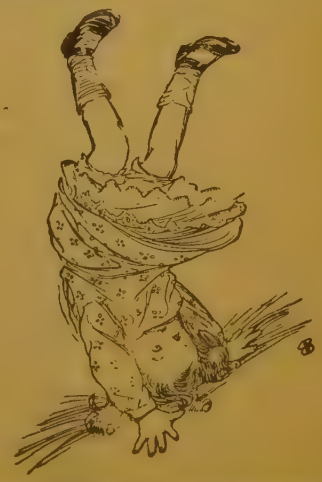
ROWLEY POWLEY, pudding and pie,
Kissed the girls and made them cry;
When the girls came out to play,
Rowley Powley ran away.

THERE was an old man in a tree,
Who was horribly bored by a bee;
When they said, "Does it buzz?"
He replied, "Yes, it does!
It's a regular brute of a bee!"

THERE was a little girl, who had a little curl,
Right in the middle of her forehead;
When she was good, she was very, very good,
But when she was bad, she was horrid.

One day she went upstairs, while her parents, unawares,
In the kitchen down below were occupied with meals;
And she stood upon her head, on her little truckle bed,
And she then began hurraying with her heels.

Her mother heard the noise, and thought it was the boys
A-playing at a combat in the attic;
But when she climbed the stair, and saw Jemima there,
She took and she did whip her most emphatic.



A FRENCH FLEET SEARCHES IN VAIN FOR LOUISIANA

La Salle, the first commander of Fort Frontenac, learned a great deal of the western country from the Indian traders. He had already traveled to the Ohio and in 1681 he set out again and journeyed up the lakes until he reached the site where Chicago now stands. From that place he and his men set out for the Illinois. They went down that river to the Mississippi, and floated down the Mississippi to the Gulf of Mexico. After that La Salle went back to France, and was sent out again to found a city on the Mississippi. But he could not find the river from the Gulf, and his men mutinied and killed him. This picture shows the search for the river.

THE HISTORY OF CANADA

IN volume one you found a general description of the great continent of North America, and also some pages and pictures telling of our part of this great division of the earth's surface. Now we shall begin to tell you more of our great Dominion. Much of its early history will also be told under the heading, United States. We shall find that England and France for more than a hundred years struggled for the possession of the St. Lawrence River, and for the right to take furs and fish. For a time it seemed that France would not only hold possession of Canada, but would also control the whole of the Mississippi Valley to the south of us as well. Finally the French power was overcome, but not until after a bloody war, of which you are about to learn.

FRENCH CANADA BEFORE THE CONQUEST

CONTINUED FROM 235

KING HENRY VII of England, not wishing to see Spain reap all the profits in the New World, signed a patent in 1496, in favor of John and Sebastian Cabot, for the discovery and conquest of new lands. In 1497, John Cabot reached North America—probably Newfoundland or Cape Breton. The next year he sailed again and this time coasted down the rocky, mountainous shore of Labrador.

CORTEREAL, THE SLAVE TRADER

Portugal also wished to share in the spoils of the New World, so in 1500, Gaspar Cortereal, one of her greatest sea captains, was sent on a voyage of discovery. He landed on the coast of Labrador and seized a number of natives embarked them on two of his ships and sent them back to Lisbon, to be sold as slaves. He, himself, set out for home in the third ship at the same time, but was never heard of again. His brother sailed the next year to search for him, but he too was lost, and these disasters ended the Portuguese attempts at discovery in America.

The next comers were the French, who were the first to make a real settlement on the northern continent.

The first Frenchmen to visit America were not ambitious explorers or seekers after gold. They were simple seafaring Norman and Breton fishermen who came to gather a harvest of fish from the teeming cod banks of Newfoundland. We have proof that these daring fishermen sailed their little fishing vessels to the banks shortly after Columbus discovered America.

VERRAZANO, THE FLORENTINE, MAKES A VOYAGE UP THE COAST

King Francis I of France, however, was not satisfied with the modest spoils of his fishermen. He had his ambitions aroused by the great claims of Spain and Portugal in the New World, and in 1523, he sent out an expedition under Verrazano.

This explorer visited Florida and sailed up the American coast to Maine. He took formal possession of the country for his royal master and called it La Nouvelle France. King Francis was so well pleased with the success of the expedition that he fitted out another. But no tidings were ever received from Verrazano or from any of his men.

JACQUES CARTIER OF ST. MALO, THE MASTER PILOT

On account of troubles at home, it was ten years before King Francis could again turn his attention to America. In 1534, he gave his assent to the equipment of an expedition. Its command was given to Jacques Cartier of St. Malo, a hardy mariner who had often visited the fishing banks of New-

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foundland. In the early summer, Cartier sailed from St. Malo with two small vessels and one hundred and twenty men. Twenty days later, the coast of Newfoundland was reached and the tiny barks passed through the Straits of Belle Isle into the Gulf of St. Lawrence. Circling round, they passed close to the New Brunswick shore. In July, they entered the Chaleur Bay and Cartier landed on its coast at Gaspé. He took formal possession of the country in the name of the French king and erected a large wooden cross as a sign of French sovereignty. Though he crossed to the island of Anticosti, he did not enter the St. Lawrence River, and on the 25th of July, he sailed for France, taking with him two natives whom he had kidnapped while at Gaspé.

CARTIER SAILS UP THE ST. LAWRENCE AND DISCOVERS "CANADA"

The following May, Cartier embarked again for the New World. On the tenth of August his ships sailed into the St. Lawrence, so called because it was discovered on the feast day of the saint bearing that name. Guided by two savages, he sailed up the river to an island, since named Isle d'Orleans. His native guides told him that the country was divided into three districts—Hochelaga, Canada and Saguenay. Here first we meet the name now borne by the Dominion. It is a word of Iroquois origin, meaning in the native tongue a collection of Indian dwellings.

CARTIER DISCOVERS BEAUTIFUL MONT ROYAL

Above the island and nestling at the foot of a mighty rock on which the citadel of Quebec now stands was the little Indian village of Stadacona. The natives, who had never before seen a white man, were very friendly. Donnacona, the chief, told the adventurers wonderful tales of the river, and its shores, and Cartier determined to explore it. Leaving his ships at the St. Charles River, he set out with fifty of his men in a pinnace. They rowed up the mysterious river till they reached the first hill of any size that they had seen since leaving Stadacona. This mountain, Cartier called Mont Royal. Its wooded crest now towers above the city of Montreal. Along the shore, sheltered from the northern blasts, was the town of Hochelaga. It was composed of about fifty tunnel-like dwellings and surrounded by a strong wall of logs.

The bearded white men with their resounding trumpets were received with a mixture of awe and delight. They were thought to have come from heaven. The half-naked Indians brought all their sick to be healed, and on leaving Cartier was showered with gifts of fish and corn.

THE HORRORS OF THAT CANADIAN WINTER

Cartier found that he could not get his boat past the rapids at Lachine, and was forced to return to Stadacona. By this time it was too late to attempt to cross the Atlantic, so he resolved to pass the winter in Canada, and his men built a rude fort and surrounded it with palisades. They were ill provided with food, however, and in December, scurvy of a violent nature broke out among the French. Of the one hundred and ten men, for some time, not more than three or four were free from the disease. Twenty-six men died before April, and most of the others were at death's door, when an Indian gave Cartier a native medicine which cured the ailing Frenchmen. When spring returned, they sailed for France, and took with them for presentation to the French king Chief Donnacona and several of his tribe whom they had treacherously seized.

THE FIRST SETTLEMENT BY WHITE MEN IN THE NORTH

On arriving home, Cartier found his country distracted by religious dissensions and at war with Charles V. Amid such troubles, he found his presence unheeded and his projects disregarded. The existence of Canada seemed to be ignored by king and country alike, and it was 1540 before Francis I could again listen to proposals concerning it. Many of his subjects were opposed to settlements, claiming that the weather was too cold and that gold and silver mines did not exist. However it was finally decided that a profitable trade in furs could be obtained and that it was unwise to allow the other European countries to share the spoils of the New World among them.

The king by royal edict, dated June 15, 1540, gave Seignior de Roberval the right to raise a body of volunteers to make a permanent settlement in the New World, and Cartier was given the command of the vessels which were to convey the colonists to America. With a part of the little squadron he sailed early in the summer of 1541, and after a three

months' stormy voyage he reached Newfoundland, where he awaited the arrival of Roberval. He failed to appear, so Cartier continued his voyage, and cast anchor at Quebec, where the colonists landed and began to clear land for cultivation. Leaving his men thus employed, he ascended the river, hoping to get beyond the Sault St. Louis, but found it impossible to clear the falls.

Roberval did not put in an appearance, and Cartier prepared to pass the winter in the country. He sent two of his vessels to St. Malo to inform the king of his work and to inquire what had delayed Roberval.

In the spring, the Indians became unfriendly and he sailed with all his colonists for home. About the same time, Roberval left France. The two small squadrons met off the shores of Newfoundland, but Cartier refused to turn back and continued his homeward voyage.

Roberval sailed on to Stadacona and made preparations for the coming winter. Before spring, fifty of his men had perished. During the summer, the king, instead of sending aid, ordered Cartier to go and bring Roberval back, as his services were needed in the war that was about to be declared. All the survivors were taken back to France, and thus ended the first attempt at colonization.

How the great fur trade was commenced by fishermen

During the remaining years of the sixteenth century, France was engaged in war and did not have the time to think of New France, and the red-skinned Canadians were left undisputed masters of their forests. Yet the Banks of Newfoundland were visited yearly by French fishermen, some of whom found it profitable to spend part of their time in exchanging gifts with the Indians for furs. These furs were sold at a handsome profit and it was not long before many fishermen devoted their entire time to the fur traffic. It attracted other adventurers, and by the end of the century a somewhat extensive trade in furs had been established.

Settlement at Tadoussac a failure

At length the fur trade attracted attention, and Pont-Gravé, a rich merchant of St. Malo, with two others, obtained a monopoly from the king, and Pont-Gravé sailed in the early summer of 1599 to establish a trading-post in Canada. Tadoussac, at the mouth of the Saguenay, a favorite meeting place of many tribes of Indians, was chosen, and sixteen men were left to hold the place during the winter. But they had not yet learned to make proper provision for the cold months and in the spring only two survivors were found. They, too, would have perished if they had not been cared for by friendly Indians. Thus the attempt at settlement ended in failure, and Tadoussac became a mere summer trading-post.

Champlain, the founder of New France

Two years later, a trading company, having secured the fur monopoly, fitted out an expedition for Canada. Captain Samuel Champlain, a distinguished naval officer, was invited to command the expedition, and with three vessels he set sail in 1603. Accompanied by Pont-Gravé, he ascended the River St. Lawrence as far as the Sault St. Louis. Upon his return to France, his report so pleased King Henry that he promised to give all possible assistance to building up French interests in Canada.

The founding of the colony of Acadia

The fur monopoly was now granted to Sieur de Monts, who had been one of the associates of Pont-Gravé. De Monts was an old friend of Henry IV of France, and through his influence it was ordered that all Huguenots were to enjoy religious freedom in the New World.

In March, 1604, de Monts and Champlain sailed with emigrants for Acadia. They passed along the coast and discovered the two rivers, St. John and St. Croix, and on an islet at the mouth of the latter river de Monts decided to land his colonists. During the winter, thirty-six of his men died from scurvy. As soon as spring arrived, he set out in search for a more suitable place. On his return from a coasting voyage to Cape Cod he found that Pont-Gravé had arrived with forty colonists. This reinforcement raised the spirits of all. With fresh courage for the struggle, they finally chose a new home, and a small town was built and named Port Royal. The little colony flourished, but the spring of 1607 brought bad news. De Monts had lost his monopoly and the colonists were forced to abandon Port

Royal and return to France. Poutrincourt in 1610 came over to Acadia with a fresh supply of colonists. He found the old buildings still standing and the natives were delighted at the return of the French.

THE SMALL BEGINNING OF A FAMOUS CITY

Champlain was chosen to settle a colony on the St. Lawrence as a base for further exploration. He left France in 1608 and reached the spot where Cartier had spent two winters. Champlain found that the village of Stadacona had been destroyed. The place was deserted and upon the site he laid the foundation of Quebec, which means a strait.

A SUCCESSFUL WAR THAT PROVED TO BE A COSTLY BLUNDER

During the year 1609 occurred an event which was the main cause of the prolonged and the bloody conflict between the Iroquois and the French. Champlain took up the cause of the Algonquins, with whom the Iroquois were at war, and left Quebec with a few Frenchmen and a flotilla of canoes filled with Indians to attack the Iroquois. A large body of water was discovered, afterwards called Lake Champlain, and upon its shores he met two hundred of the fiercest and bravest Iroquois. The war-whoop of the Indians was met by a discharge from Champlain's matchlock, and mistaking the flash for lightning, the superstitious Indians fled. The next year Champlain defeated them in a pitched battle at the mouth of the Richelieu, and from this time until Canada became an English colony, the powerful Iroquois were always the bitterest enemies of the French.

CHAMPLAIN A GREAT EXPLORER AND A LAWGIVER

In 1613, Champlain with five companions and two canoes paddled up the Ottawa River to Rideau Falls. Two years later, he made another expedition further up the Ottawa, reached Mattawa, crossed by a short portage into Lake Nipissing and then descended the French River into Lake Huron. In September, he led a large party of the Hurons down the River Trent into Lake Ontario. There the Indians made an attack on a well-palisaded town of the Oneida Indians and were repulsed. Champlain was wounded and as a result lost his great prestige.

In 1621, Champlain issued a number of ordinances for securing peace and order in the colony. This collection forms a kind of code and was the first that Canada possessed.

THE "COMPANY OF THE HUNDRED ASSOCIATES"

In 1627 an important step for the future of the new colony was made. Up to this time the colonists had devoted almost their entire time to the fur trade. Very little had been done towards clearing the forests and tilling the soil and the great Cardinal Richelieu determined that more attention should be paid to colonization. To help in carrying out his plans, he formed a new company of traders under the name of The Company of New France, more commonly called the Company of the Hundred Associates. Richelieu granted to its members the monopoly of trade and the power to govern New France and Florida, and the king gave the company two ships and made twelve of its chief members nobles. In return for these privileges, the company undertook to send out four thousand settlers during the next fifteen years, with the agreement that each colonist should be of French birth and a Catholic. Thus did Canada pass once more from a royal to a commercial regime.

QUEBEC BECAME FOR THREE YEARS AN ENGLISH PROVINCE

Charles I of England took up the cause of the Huguenots and declared war against France. A fleet of war vessels was equipped in England to invade the settlements of New France and attack Quebec. In the summer of 1628, the English vessels reached the Gulf of St. Lawrence. They captured several French vessels laden with fish and furs. Then they met and defeated a French fleet sent over by the Hundred Associates with colonists and supplies for Quebec. Kirke, the English commander, satisfied with his success, returned to England. Quebec, deprived of its supplies, had a very hard winter, and when Kirke returned the following spring, it surrendered.

During the following three years Quebec was occupied by an English garrison, and the soldiers made much profit out of the fur trade with the Indians. The war, however, between England and France was brought to a close by the Treaty of St. Germain-en-Laye (1632). By the terms of the treaty New France and Acadia were given back by England and Champlain was restored to his post.

PLANTING THE BRITISH FLAG IN CANADA

It was in 1492 that Columbus found America where he sought India. Five years later Englishmen, under Cabot, discovered Newfoundland, and French fishermen went there to catch cod. From there they reached Canada, and in 1534 Jacques Cartier arrived at what is now Newfoundland. He made two other journeys to Canada, claiming it for France. Then Frenchmen tried to settle there, but it was not until Samuel de Champlain was sent out by Henry IV. of France, in 1608, that the French colonists succeeded. Champlain explored and founded settlements, and did his best for the natives, but he was not supported by his king, and in 1629 an English force took him prisoner and sent him to England. Here we see him surrendering to the English. He was later released, and died in Canada in 1635, after it was restored to the French.

NEW FRANCE MADE A ROYAL PROVINCE

The history of the country from 1633 to 1663 is but the history of the fur trade, the Jesuit missions and the struggle against the Iroquois. The Company of the Hundred Associates devoted all its time to the fur trade and paid little heed to colonization. Because it did not carry out this part of its agreement, the king in 1663 cancelled its charter and New France was made a royal province.

THE FRENCH AND ENGLISH BECOME RIVALS

Meantime the English had gained a footing on the continent and rivalry had sprung up between the two nations, each of which desired from the beginning to force the other out. The first clash came as early as 1613 when Samuel Argall set out from Virginia with an expedition to drive the French from Acadia. Port Royal was pillaged and the crops in the fields destroyed. As a result of this raid, Great Britain began to press her claims upon Acadia. After 1614, the land which King James of England had granted to the Plymouth Company between the forty-fifth and forty-eighth parallels of latitude was called New England. There was now a New England and a New France, and Sir William Alexander, a loyal Scotchman, decided there should also be a New Scotland. From the king he obtained, in 1621, a grant of the whole of Acadia under the general name of New Scotland or Nova Scotia. Charles I renewed Alexander's charter and later established the Order of Baronets of Nova Scotia, each member of which, in return for a pledge to make actual settlements in the colony, received an estate of eighteen square miles. Admiral Kirke, in 1628, declared Acadia to be under the rule of Sir William Alexander's Company, but the company did not prosper and by the treaty of 1632 Acadia was restored to France. The forces of Oliver Cromwell conquered the colony in 1654, but it was again restored to France by his successor.

HOW CANADA AS A FRENCH COLONY WAS GOVERNED

Under the new system of royal government, the three most important persons in New France were the governor, the intendant and the bishop. The governor was the official head of the colony and through him all negotiations with the Indian tribes and with the English colonies were conducted. In addition to the governor-general there were local governors at Montreal and Three Rivers. The intendant had charge of justice, police and finances, and may be called the king's business manager for the province. The bishop was the head of the Church. These three, together with a body of councillors, at first five, afterwards seven, and finally twelve, formed the Sovereign Council, of which the name was afterwards changed to Superior Council. This council was a legislative body and a court of justice, and was bound to enforce the edicts of the king. This form of government caused much friction and there were many bitter disputes between the governor-general, the intendant and the council. As the king, three thousand miles away, was the only one to decide these disputes, a strife would frequently last for months.

THE SEIGNIORIAL SYSTEM UNDER WHICH CANADA WAS SETTLED

The system adopted to advance settlement was a mild form of feudalism, which was called the seigniorial system. Under this, the king granted large tracts of land to a few gentlemen, who each undertook to provide a certain number of armed men for the defence of the colony. Out of their large estates the seigniors made small grants to retainers, who in Canada were called *habitants*. The *habitants* owed military service to the seigniors, just as the seigniors owed service to the King, and in this way the seigniors had an armed force at their call. The seignior was required to keep a mill to grind flour and meal for his tenants, but in return, he took a toll of the flour and meal. The *habitants* owed a certain number of days of free service each year to the seignior, and paid him a fine on every sale of land, while if the seignior sold his land, or if he inherited property, except from his father or mother, the king claimed a part of the purchase money or the value of the land as his due.

In 1672 there arrived at Quebec the most famous of all the governors of New France—Louis de Buade, Count de Frontenac, called by the Indians the Great Onontio. He determined to compel the Indians to sell their furs to the French rather than to the English, who were trying to gain a share in the fur trade, and accordingly, in 1673, he built Fort Fronte-

nac where Kingston now stands, to intercept the fur trade. The great explorer, La Salle, was the first commander of the fort, and started from it on his journey to the Mississippi.

War between French and English and the loss of Acadia

From 1694, the French settlement continued to increase and aroused the jealousy of the English colonists to the south. Both parties, aided by the Indians, carried on a destructive border warfare.

In 1703, there broke out in Europe the War of the Spanish Succession, and the war soon led to hostilities in America. Several unsuccessful attempts were made by the New Englanders to take Acadia, and finally, in 1710, an expedition under Nicholson was sent on this mission. Port Royal with little resistance was taken, and this meant the capture of Acadia, which thus passed for ever out of the hands of the French. The following year the English under Admiral Walker failed in an attack on Quebec. The Peace of Utrecht (1713) brought peace for a time to America. By its terms, France abandoned all claims to Hudson Bay, Acadia and Newfoundland, but retained Cape Breton, Prince Edward Island and certain fishing privileges off Newfoundland.

How the fortress of Louisbourg was captured

During the thirty years peace that followed, the English and the French in America were constantly on the verge of war. The French chose Louisbourg as a seat of government and at once commenced to fortify it.

Early in 1744, news reached the New World that war had been declared between England and France. In a few months, American waters swarmed with French privateers, for which the harbor at Louisbourg provided a safe refuge, and the New Englanders determined that the town should be destroyed, and for that purpose fitted out an expedition. Under the leadership of William Pepperell it left Boston on the last day of March, 1745, and joined the English fleet under Admiral Warren. Louisbourg was besieged, and after a brave defence which lasted for seven weeks the town surrendered. A series of raids and counter raids followed, but this border warfare was interrupted by the Peace of Aix-la-Chapelle (1748), by which Cape Breton and the captured fortress of Louisbourg were restored.

General Braddock fails to drive the French out of Ohio Valley

The peace was but a truce, hostilities hardly ceasing in America. Beyond the Alleghanies English traders had pushed their way into the Ohio Valley, which was claimed by the French. The French objected and determined to fortify the Ohio Valley by a line of forts. The English decided to drive their enemies out of the valley, and General Braddock, at the head of an English army, was sent out to do this work. His campaign was a disastrous failure.

Louis XV, on the eve of war in Europe, could spare but few troops, but he sent to command his little army in America one of his bravest soldiers, the Marquis de Montcalm, who arrived in Canada in May, 1756, the same month that war was declared between his country and England. Both sides were very active in preparing for the coming struggle. In August, Montcalm captured Oswego, and followed this up by taking Fort William Henry, but on the other hand the English captured Louisbourg and destroyed it.

The fall of Quebec and the death of two great soldiers

The British now prepared for a supreme effort to take New France and Lord Amherst was ordered to march on Montreal while General Wolfe was sent to capture Quebec. The fleet which bore Wolfe and his men reached the Isle d'Orleans near the end of June. His land force numbered less than nine thousand men while Montcalm, who had taken vigorous measures for the defence of the city, and held almost an impregnable position, had five thousand more. It was Wolfe's plan at first to tempt his opponent to battle but in this he failed, and he decided to stake everything upon an attempt to scale the Heights of Abraham. The plan succeeded, and as morning broke on the thirteenth of September, 1759, the British troops stood on the Plains of Abraham and faced the French army. But charging at the head of his grenadiers, Wolfe was fatally wounded and with the din of victory ringing in his ears he died. In the rout which followed, Montcalm was wounded, and he, too, died the following day. The following year Montreal was captured, and this closed the struggle. By the Treaty of Paris (1763) Canada remained a British colony.

THE NEXT STORY OF CANADA IS ON PAGE 755.

TWO SCENES FROM SHAKESPEARE'S PLAYS

CLAUDIO'S SISTER SHRINKS FROM ANGELO'S SUGGESTION THAT SHE WED HIM

PRINCE FLORIZEL AND LEONTES' LOVELY DAUGHTER PERDITA

THE PLAYS OF SHAKESPEARE

IN our last readings of the stories from Shakespeare's plays we had chiefly sad stories, or tragedies; so we turn now for a change to some happy tales or comedies. There is both sorrow and joy in life, and in our reading we should seek to vary the subject by choosing now tragedy and now comedy, and not always to read one sort of tale, as that would give us a wrong idea of life. As we saw in the story of "Othello" the unhappy ending of a hasty man's jealousy, we are now to see how the same folly may end not unhappily, for "A Winter's Tale," like "A Midsummer Night's Dream," is a delightful piece of fancy and imagination; just the sort of story that we love to tell at a winter fireside. "Measure for Measure" is also a fine comedy that teaches us useful lessons of conduct; while the charming comedy of "Much Ado about Nothing," like "A Winter's Tale," shows how foolish it is to pay any attention to the tongues of slanderers.

MEASURE FOR MEASURE

CONTINUED FROM 450

IN olden times there was a Duke of Vienna whose good-natured treatment of his people had not been to the advantage of his state. The laws of the city not being strictly enforced, as all laws should be, people stood in no fear of them. The Duke saw that for his people's good the laws would have to be kept, but at the same time he did not wish to appear suddenly to change from a kind ruler into a tyrant. He had, therefore, to think of some way to carry out his reform without appearing to have lost his kindly interest in his subjects.

Among the noblemen of Vienna was one Angelo, a stern, severe, and cold-hearted man. The Duke, thinking that Angelo would be just the man to enforce the laws, appointed him Lord Deputy, and gave out a report that he himself was leaving for a time to visit another country. Instead of going away, however, he assumed the habit of a monk, and, thus disguised, remained in Vienna to see how Angelo conducted himself.

As chance would have it, the first case to call for Angelo's judgment was that of Claudio, a young gentleman who had secretly married a young lady named Juliet. In those days, and still in many parts of Europe, a bride had to bring her husband a marriage dower, a gift of money or land, presented by her parents or relatives. Claudio and Juliet were keeping their marriage secret until it was known what fortune her relatives would fix for her dower. For this Claudio was condemned to death, a sentence which was an outrage, but Angelo was keen to exercize his new power, like all persons "drest in a little brief authority."

Claudio had a sister who, when this misfortune befell her brother, had but newly entered a convent, and on news of the impending execution of her brother reaching her, retiring and gentle though she was, she took courage to go forth and intercede with Angelo herself on behalf of Claudio.

Although the Lord Deputy was a cold and cruel man, he was not insensible to the winning beauty of Isabella, as Claudio's sister was named, and her appeal seemed to soften him; but that was only because a selfish desire to possess the beautiful creature had been awakened in him. If she would consent to marry him, he promised to pardon her brother, thus being ready to add one injustice to another. The idea was horrible to a young lady who had just given up the thought of marriage, and of all men Angelo would have been the last she could have cared for. So she indignantly refused him, and when she visited her brother in prison, he, too, approved of her refusal; but as he thought of his impending doom, his courage

failed him and he begged her to submit.

The talk between the brother and sister in the prison had been overheard by a monk or friar, who was none other than the Duke in disguise, and he was filled with anger to find that Angelo was abusing his trust. In a flash he thought of a clever way to outwit Angelo and bring happiness where so much sorrow threatened.

There was a lady, he told Isabella, named Mariana, whom Angelo, five years before, had vowed to marry, but did not do so, as her marriage dower was not forthcoming; yet Mariana loved him still. Isabella was to make pretence of agreeing to Angelo's proposal for the sake of her brother, but she had to arrange with this Mariana that she would take Isabella's place at the wedding, wearing a veil, so that the bridegroom would not discover the ruse until it was too late. Mariana had also to say to Angelo when she appeared before him veiled: "Remember now my brother."

All this was carried out accordingly; but a pirate having died in prison, whose hair and beard resembled those of Claudio, the Duke managed to get the head of this dead man sent to Angelo with the intimation that it was the head of Claudio! Meanwhile, Claudio himself had been, thanks to the Duke, taken out of danger.

Now was the moment for the Duke to complete the discomfiture of his unfaithful deputy; so, withdrawing from the city, and dressing again in his proper clothes, he sent forward news that he was returning from Poland. Angelo came to the city gate to meet him, and the usual friendly speeches were made, the Duke appearing ignorant of all that had happened. Then came forward Isabella, pretending to appeal to the Duke to punish Angelo for having murdered her brother. Angelo was indeed dismayed when the veiled lady he had but newly wedded also came forward and disclosed herself as his old sweetheart.

The Duke threatened to visit upon Angelo the fate which the latter had designed for Claudio; but both Isabella and Mariana begged that he might be pardoned, and this the Duke agreed to. Nor did Isabella refuse the offer of the kind-hearted Duke to make her his own wife. And so the comedy ended, with happiness for all. We can see why it is called "Measure for Measure," since Angelo was made to feel himself in very much the same position as he had placed Claudio, and "Tit for Tat" would be a children's title for it.

THE COMEDY OF "A WINTER'S TALE"

THERE were two Kings who had been brought up together and grown to like each other so well that they were almost as brothers. The one was King of Sicilia, his name being Leontes; and the other, who was called Polixenes, reigned over the kingdom of Bohemia. Once when Polixenes was on a visit to Leontes, the latter had so enjoyed his society that he begged his friend to stay longer. But Polixenes seemed bent on returning to Bohemia, until Hermione, the tender and loving Queen of Leontes, joined her entreaties to those of her husband, when Polixenes yielded to her gentle persuasion and decided to prolong his visit.

Unhappily, Leontes, though in the main a good and kind King, must have been of a jealous nature, for although he had asked his wife to urge Polixenes to stay, when his friend did, for her asking, what he had not seemed ready to do for him, Leontes suddenly became foolishly jealous of Polixenes. In his folly he told his servant Camillo that he believed Polixenes and Hermione had fallen in love, but Camillo knew this was not true. He humored the jealous King, however, by promising to poison Polixenes if what Leontes said was true. But what he did was to tell the King of Bohemia of the madness that had come upon his old friend, and that night both Polixenes and Camillo had fled from Sicilia.

Nothing would persuade Leontes of his folly, and he accused his poor Queen of acts and thoughts of which she was entirely innocent. He even refused to look upon their newly-born daughter, Perdita, and ordered that the child should be taken and left to die in a desert place.

Naturally, Hermione denied the unjust charges brought against her, and in this she was supported by the famous oracle at Delphi. This oracle was supposed to be the voice of the gods, which

in those pagan times could be consulted on matters of difficulty through the priestess in the great temple of Delphi. It was, of course, entirely superstition; but the answer that came from Delphi as to Hermione's conduct said she was entirely innocent, whereas Leontes was a jealous tyrant, who would not have an heir to his throne "if that which is lost be not found."

Soon the words of the oracle seemed to be coming true, as the King's only son, the young Prince Mamillus, died of grief at his mother's woes; and Hermione herself became so ill that it was said she, too, had died.

Too late, the jealous King realized his folly; and now that he believed both his wife and son to be dead, he declared he would visit their grave each day and spend his years in mourning.

But Leontes did not know that, while the officer who had taken the little Perdita to a desert part of Bohemia had himself been killed by a bear, the child had been rescued by a shepherd, who knew from certain jewels and other things the officer had with him that the child was of royal birth. Still, the shepherd took no steps to find out her parents, but brought her up as his own daughter, and watched her with joy and delight as she grew into the loveliest shepherdess that ever was.

Sixteen years had thus passed by, and Perdita found herself beloved by a brave and handsome youth, who often came to visit her as she tended her sheep; but whence he came she did not know.

After all these years, too, Camillo, who had lived with Polixenes since they fled from Sicilia together, had a great longing to return to his native country. But the King of Bohemia was loth to let him go, as he wished that they should go together in disguise to discover why the young Prince Florizel was so often absent from Court and loved to spend his time in the country.

This Camillo agreed to, and their discovery was indeed a surprize to the King, as Florizel proved to be none other than the sweetheart of Perdita, the shepherdess, whom he wished to marry. The King, of course, sternly forbade him, and threatened to have Perdita removed if she ever saw Florizel again. But Camillo now carried out his wish to return to his native land, and took with him, in disguise, both Florizel and the lovely shepherdess.

Leontes gave a warm welcome to the son of his old friend, whom he had so greatly wronged; and the old shepherd, having followed the runaways into Sicilia, disclosed the parentage of Perdita, to the joy of her father.

Then came the happiest event of all, when Paulina, a dear friend of Hermione, and widow of the officer who had taken Perdita away, invited Leontes to see a beautiful new statue of Hermione. When he did see it, so lifelike it seemed that he could scarce forbear to touch it; and lo! the figure descended from the pedestal and laid her head upon his breast. It was Hermione alive, for she had never been dead!

Leontes, now happier than his former folly gave him any right to be, was friends again with Polixenes; and, of course, Florizel and Perdita were married in due course, thus uniting the fortunes of the two kingdoms.

MUCH ADO ABOUT NOTHING

WHEN he was returning from battle, with some of his principal followers, Don Pedro, Prince of Arragon, an ancient kingdom of Spain, broke his journey at the town of Messina to rest for a time as the guest of its governor, Leonato.

This Leonato had a daughter, as gentle and good as she was beautiful and clever. Her name was Hero, and she and her cousin Beatrice, who was witty and merry, more lively, but not quite so even-tempered as Hero, made the home of Leonato bright and happy. It so happened that in the train of Don Pedro there was a young and brave gentleman of Florence, named Claudio, a great favorite of the Prince, because of the soldierly service he had rendered him.

Claudio was very happy in going to Messina, as he was in love with Hero, whom he had seen before, and he now rejoiced that the Prince had promised to advance him as suitor for that charming lady's hand.

There was another gentleman of the Prince's train, named Benedick, a young nobleman from Padua, who was also a favorite of Don Pedro's; and he, too, was brave and manly, but more moody than Claudio, sometimes liking to read a book rather than to make himself agree-

able to the ladies. All went smoothly so far as Hero and Claudio were concerned, for not only was it clear they loved one another, but, Leonato having given his consent to their marriage, preparations for that happy event were soon in progress. Meanwhile, every time that Beatrice and Benedick had met they found occasion to quarrel, and, though they seemed to like each other's company, one might have thought, to hear them, that nothing would ever induce either to marry.

Now, when a couple are engaged to be married they are usually so happy that they like to see others happy also; and so it was with Hero and Claudio. Together with the Duke and Leonato, they agreed upon a little plan to make Beatrice and Benedick cease their bickering and love each other.

One day, when Benedick had withdrawn to a shady arbor in the garden, the Prince, Leonato, and Claudio seated themselves near to where he was and began to talk, so that Benedick might hear them in his arbor, about the way in which poor Beatrice was dying of love for him! They pretended that she was deeply in love with Benedick, and yet Hero had said: "Beatrice would die ere she made her love known."

This, you will see, was the beginning of their little scheme, and it is no wonder that Benedick, overhearing their remarks, began to think his behavior to Beatrice had been cruel and ungallant.

Meanwhile, Hero had her part to play in this pretty comedy of love, and, sending one of her attendants to tell the unsuspecting Beatrice that Hero and another lady in the garden were talking about her, it was not many minutes before that lively and inquisitive lady had stolen out to overhear what they might have to say. Their talk was all about Benedick being deeply in love with her. They also spoke in so much praise of him that Beatrice forthwith became as tender in her thoughts towards him as his had now become towards her.

But into this happy comedy the figure of a mischief-maker now steps. This is Don John, half-brother of the Prince, whom he hates so much that he would do anything to annoy him. For the moment he can think of nothing better than to stir up the feeling of jealousy between the Prince's young friend Claudio and the unsuspecting Hero. Assuring the lover that Hero had really given her heart to another gallant, and inducing both Claudio and Don Pedro to hide with him in the garden on the eve of Hero's intended wedding day, a lady was seen by them at Hero's window bidding farewell to an unknown man. This was merely one of Hero's lady companions saying good-night to her own sweetheart, a follower of Don John, but Claudio and the Prince were both misled into thinking it was Hero herself.

Claudio, mad with rage, swore to renounce the innocent Hero at the altar next day. This cruel threat he actually fulfilled, and the poor lady, utterly at a loss to understand the cause, almost died of grief. Her cousin Beatrice, of course, would not believe her capable of any dishonorable action, and made Benedick, now really in love with herself, undertake to fight a duel with Claudio.

In the meantime it was pretended that Hero had really died; and Benedick had challenged Claudio to the duel, just when Dogberry and Verges, two comically stupid officers of the watch, brought in two of Don John's followers whom they had arrested at night, scheming of some plot, as they believed. To save himself, one of the prisoners at once confessed that he had visited his sweetheart that night, so that when she came to the window the watchers in the garden might mistake her for Hero. This he had done at the instigation of Don John.

Claudio, on hearing this, was overwhelmed with grief, and, believing the innocent lady to have died, he was in despair; but Leonato told him his brother had a daughter the very image of the child he had lost, and if Claudio would marry her he would forgive him the sorrow he had caused by his folly in listening to slanderous tongues.

When this new bride came to meet her bridegroom, her features were masked; but judge of Claudio's surprize when she uncovered her face, and he looked again into the dear eyes of Hero.

The threatened duel between Claudio and Benedick had now no excuse, for all were friends again, and not only do we see Hero and Claudio ready for their wedding, but Beatrice and Benedick also.

Don John was imprisoned, and in due time was punished for mischief-making.

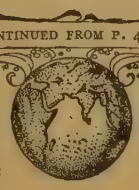
THE NEXT STORY OF FAMOUS BOOKS IS ON PAGE 637.

WHAT THIS STORY TELLS US

WE come in these pages to the story of what the earth is like to-day. We have learned how men arrived at the great fact that the earth is a moving ball going round the sun, and how we suppose the ball came into being. We have considered its shape and its size. Here we learn what men know about the stuff the ball is made of, and the way it is held together. We are born upon this great ball which is carrying us through space, and we cannot leave it. Though, compared with all the stars and suns and planets, the earth is only a grain of dust, yet it is to us the most important part of the whole universe, and we are right to think so. Therefore we cannot know too much about it. We read here of the earth's crust and its inside, and we begin to learn how the world is kept warm.

THE EARTH AS IT IS TO-DAY

CONTINUED FROM P. 433



SO far we have been going over a kind of history, showing very shortly the chief things that have happened in order to make the earth of to-day. But we have seen also what people are so apt to forget—that the things which went on in the past are going on still; *the earth, which is the product of changes, is still changing.*

We shall not talk here about the oceans and the seas and continents and mountains—what is called geography. That is important, and we shall come to it in its proper place and at the proper time. We must begin now by thinking of the earth as a ball, speaking about it just as one might speak about a cricket-ball. Perhaps you know that a cricket-ball has a certain weight, that it has a cover, and that inside this there is a core, which is made of certain materials put together in a particular way. You may also know that a cricket-ball is elastic, so that when you throw it against a wall it comes back again instead of spreading out and sticking to the wall, as a lump of mud would. Now, just in the same way I want to tell you about the great earth-ball, tiny little pieces of which we put together to make cricket-balls, cathedrals, and other things.

In the last part we said what the size of the earth was. Now, we have a good idea of what a yard is and what a mile is, but it is very difficult to imagine such a distance as 25,000 miles; yet, though this sounds such a big figure, I do want you to realize that, compared with other things, the earth is really very small. For instance, there is a very good way of comparing the size of the earth with that of the sun, as shown in the picture on the next page. If the centre of the sun could be placed at the centre of the earth, the surface of the sun would reach far beyond the distance that the moon is from the earth—that is to say, the sun occupies far more space than the whole of the space swept by the earth and the moon moving round her.

And yet the sun does not look so very much bigger than the moon, though really you might throw a thousand moons into the sun, and the difference they would make would not be worth mentioning.

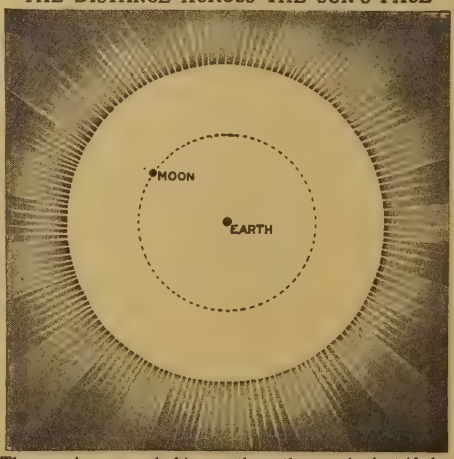
Now, I am not going to give you the figures which say how many square miles there are on the surface of the earth, or yet how many millions of millions of tons it weighs, because we cannot realize what these figures mean, and so they are of no use to us at present.

There is, however, one enormously interesting thing about the earth which can be expressed in a way which we understand, and which is interesting, because it means so much, and this is the question of the density of the earth. First of all, I

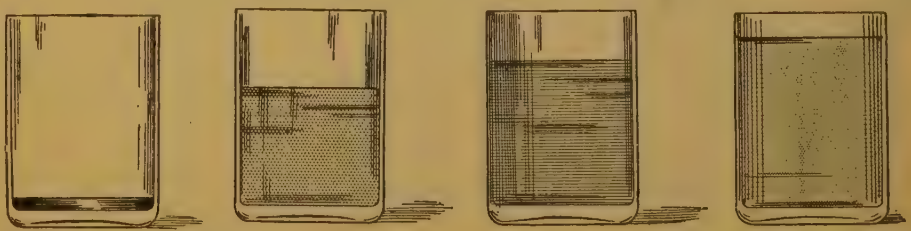
want to tell you what density is; second, how the density of the earth can be found out; and, third, what the earth's density is and what it means.

A tennis-ball is bigger than a golf-ball, but it is not so heavy. There is more stuff in the golf-ball than there is in the tennis-ball. A big piece of coal is heavier than a small piece of coal. There is more stuff in the bigger piece; but if you took two pieces of the same size they would be the same weight — that is to say, they would have the same amount of stuff in them. Now, there is a special word for the size of a thing —that is to say, for the amount of space that it occupies. This special name is volume, and really it is not difficult to understand, for it only means size, or bigness. Now, as the tennis-ball and the golf-ball show, the volume of a thing tells you nothing about its weight, or, rather, about the amount of stuff in it—*unless* you can compare it with a different volume of the same material, as in the case of pieces of coal of different size. So we want a special word to mean the amount of stuff there is in any particular kind of thing as compared with a similar volume, or size, or bigness, of something else. You know what a cube is—a thing like the bricks you used to use for making pictures. Now, if you can imagine a cube of water, such as you might have by pouring water into a cubical vessel, that would have a certain amount of stuff in it according to the size of the cube. If, now, you poured the water out and filled the cube with mercury instead, you would have the same volume, or size, or bigness, of mercury, but it would be much heavier. The mercury gets more stuff into the same amount of space than the water does. Now, the proper way of saying this is that the mercury is *denser*— or has a greater *mass*—than the water. Perhaps you will say that you do not see any particular reason why it should not be good enough to say that the mercury is heavier than the water. The only objection to that is that, though it is quite true for here and now, yet the heaviness, or weight, of a thing depends upon the earth's pull for it and its pull for the earth; whereas the amount of stuff in it—which is what we are interested in — would remain the same even if the earth were moved a million miles away, and so could scarcely pull at all. Therefore, instead of describing the amount of stuff in a thing by the word "weight," we use the word *mass*, or *denseness*; and the mass of a thing would remain the same, of course, even if it were moved to the moon, where it would

THE DISTANCE ACROSS THE SUN'S FACE



The sun is so much bigger than the earth that if the sun was placed at the centre of the earth the outer edge would reach as far beyond the moon as the moon is from the earth. It is four times as far across the sun's face as it is from the earth to the moon.



These pictures help us to understand what we mean by the density of the earth. Here are four glasses. The first contains a little mercury, or quicksilver; the second is more than half full of glycerine; the third contains a little more of water; and the fourth is nearly full of kerosene. Though the space occupied by these is so different, each has the same amount of stuff, just as a piece of snow, when melted into water, has the same amount of "stuff" as before, though it takes up less space.

weigh far less, as the moon is smaller and therefore pulls less hard, or if it were moved to Jupiter or the sun, where it would weigh much heavier, since these are much larger than the earth, and pull much more powerfully.

Now, in order to compare the massiveness of different things — which we usually call their *density* — we take a certain volume of water under definite conditions, and call its density *one*; then, if we find that something else is twice as massive, or dense, as water, we say that its density is *two*—and so on. I am sure you will understand that if the thing we were comparing with water were at the same distance from the centre of the earth, then, if it were twice as dense as the water, the same volume, or bigness, of it would be twice as heavy, or would weigh twice as much. But I have explained to you why we do not use the word weight, as weight depends upon the earth's pull—or the moon's pull if we were on the moon; and if you think that it is not worth while to make this distinction, I can very soon show you that it is.

WHY IT IS THAT THE SAME THING DOES NOT ALWAYS WEIGH THE SAME

If we take two metal cubes of exactly the same size and material, and place them side by side on a flat table, then, besides being of the same density, or massiveness, they are also, of course, of the same weight. But if, instead of having the two cubes side by side, you put one on top of the other, though they are still of the same massiveness, or density, though there is still the same amount of stuff in the one as in the other, yet it can be shown that the one which is above now weighs less than the other, because it is *a little bit further from the earth*, and therefore the earth and it do not pull each other quite so hard. Now, I hope you agree with me, after this, that there is some sense in distinguishing between mass and weight.

How are we to find out what is the density of the earth? How are we to find out whether this great ball is less massive, or dense, than water, or more massive, or dense? This is a problem which men of science have long been engaged upon, and it has been thought out in various ways. Just now, perhaps, it is enough to say that if we can measure the extent to which the earth makes a pendulum swing, and the rate at which that pendulum swings, we can measure the force with which the earth acts upon it, and therefore, as we already know the size, or volume, or bigness, of the earth, we can say how dense it is—that is to say, how tightly the stuff in it is packed.

THE EARTH INSIDE IS PACKED MORE TIGHTLY THAN ANYTHING WE KNOW

Now, the extremely remarkable conclusion to which we come is that the earth is somewhere between four and six times as dense as water.

Water, you know, is a very heavy thing, and as long as we think about things at the surface of the earth, that is as good as to say that it is a very dense thing, because weight or heaviness is a perfect guide to density or massiveness, so long as we are comparing things at the same distance from the centre of the earth. Now, if the earth, as a whole, is five times as dense as water, the stuff in the inside of it must be squeezed together more tightly than we can imagine. None of the things we know and can examine at the surface of the earth, no rocks or coal, or anything of that sort, are nearly as dense as this average density of the earth, and therefore, away down beneath us, the stuff of which the earth is made must be so tightly packed that the densest things we know, such as lead, can be almost nothing compared with it.

THE THIN CRUST OF THE EARTH, UPON WHICH WE LIVE

This is not only very interesting in itself, but it is also very important, because of what it tells us as to the tremendous forces which are, so to speak, chained up underneath us.

Sometimes, as we know, these show themselves by means of earthquakes. It is also interesting to know that the crust of the earth, compared with the whole size of the earth, is really extremely thin. It feels firm enough under our feet, and there is no fear of its cracking and letting us through, but I think that if the earth could be cut right through the middle like an orange we should be very much astonished, if we could take a sort of birdseye view of the whole cut surface, to see how thin is the crust on which we walk and from which all living things have been produced. Of course, when we learn

that the inside of the earth has this extraordinary density, we are apt to think of it as solid—far more solid than lead. But another great fact about it is that it is intensely hot, so hot that no heat we know on the surface of the earth can compare with it. It is, indeed, probable that the inside of the earth is so hot that the stuff of which it is made is not really solid at all. On the other hand, we may be wrong in thinking of it as liquid or as a gas, for it is more than likely that matter inside the earth, owing to heat and pressure, has a state which is like nothing that we know.

IF WE COULD THROW THE EARTH AT A WALL IT WOULD BOUNCE!

We said something a little while ago about a cricket-ball being elastic, so that when it is thrown against a wall it comes back again, instead of spreading out and sticking there like a lump of wet mud. When we say that a thing is elastic, we simply mean that when it is put out of its shape it comes back to its old shape as soon as it can. When the cricket-ball hits the wall, it is flattened at one part for a twinkling of time, and then it springs back to its original shape, and that makes it bound back from the wall. Now, if you could throw the great ball called the earth against a wall, it would spring back more perfectly than a cricket-ball, more perfectly even than a ball of steel. Only I do not think this experiment will ever be made.

There is a cheap kind of cricket-ball which is called a composition cricket-ball, often called "compo" for short by boys. This means that it is a composition of a number of things put together.

THE DIFFERENT MATERIALS OF WHICH THE EARTH-BALL IS MADE

Well, the earth is also a "compo," composed of a large number of different materials put together in a particular way; and this question of the composition of the earth is an immensely interesting one, which we must study carefully. But before we go into that I want to tell you about the very newest thing that we have just learnt about the composition of the earth; and I want to tell you this first, though it is the thing we have learnt last, because it tells us far more than ever we knew before about the history of the earth, about what is happening to it now, and about the wonderful way in which the earth is kept warm. This is a perfectly wonderful discovery. The special kind of stuff with which it deals is very rare, but it is one of the substances which make up the earth. There is so little of it that if the stuff were not so wonderful in itself it would not be worth mentioning. Its name is radium; but before I tell you why its discovery in the earth is so important, we will ask ourselves in what ways the earth might be kept warm.

In the first place, the earth might be kept warm by the heat of the sun—of which we catch only a very tiny amount, of course, but still enough to produce all the life on the earth, our own included. However, during the night the earth throws back into space the heat which it got from the sun during the day, and as you know what night and day mean, this is as much as to say that all the time one half of the earth is getting heat from the sun the other half is losing it. We are quite certain that the earth would soon freeze solid, and become as dead and cold as the moon, if the sun's heat were all it had to keep it warm. The moon gets the sun's heat just as we do, but the moon is cold.

YEAR IN, YEAR OUT, THE EARTH IS ALWAYS LOSING ITS HEAT

Secondly, we know that the earth is kept warm by the heat in its inside. It is not making any heat in its inside, however—or so, at least, we thought until the other day—but the heat from the inside simply soaks outwards and keeps the crust warm, and then it passes away from the crust into the air, and is finally lost.

Year in, year out, then, the earth is slowly losing its heat, and, of course, this could not go on for ever. The moon, of course, was hot when it began, but it has got cool much quicker than the earth, because it is so very much smaller. A small thing always loses its heat quicker than a big thing, because a small thing has a bigger amount of surface to lose its heat by in proportion to the amount of stuff in it. That is why a baby has to be kept so very warmly clad.

THE NEXT PART OF THE STORY OF THE EARTH BEGINS ON PAGE 645.

FLORENCE NIGHTINGALE TRAVELING ON THE BATTLEFIELD

THE LADY WITH THE LAMP

CONTINUED FROM 476

EARLY in the last century there was a pretty little girl living in a beautiful English home, surrounded by a handsome park, who played with her dolls in quite a new and startling fashion. She was fond of cuddling these little creatures, and she undressed them and put them to bed, and made tea for them in dolls'-house china, just like all other little girls in every age of history. But she did something else as well. She used to pretend that they were ill, and nurse them; and also she used to pretend that frightful accidents had happened to them, and would bandage their legs and arms with strips of linen, and treat them with great care.

As she grew older she used to go into the cottages of the peasants round her father's estate, and if she found any of them ill she would set about nursing them and trying to make them well. It was wonderful to see this bright girl, who might have spent all her time in games and sports, giving herself with delight to nursing the sick people in her village. She was intensely fond of animals, and the first patient she had was a dog.

Well, the years passed away, and this happy child, whose name was Florence Nightingale, became a handsome young lady, who had to go to London with her parents to be presented at Court. But she did not like the easy and pleasant occupations of society, and instead of going out to parties she visited the London hospitals and studied how sick people were nursed back to health and strength. In those days hospital nurses were very ignorant, and Florence Nightingale was shocked by the roughness and stupidity of England's hospitals. So she went away to Germany and studied nursing there; and then she went to Paris and learned all she could there. At last, when she was quite certain she had mastered her subject, she returned to England and began her work of improving the nursing in the hospitals.

While she was engaged at this work a war broke out in the Crimea between Russia and England. At first people thought only of the glory of battle, and the courage of soldiers who went singing to death. But soon other stories came home to England, dreadful stories—stories of wounded men being left to die, and of other wounded men being operated on by surgeons in the blood-soaked trenches. England was shocked by these things, and everybody cried out that something

must be done, something heroic, something that would put a stop at once to the sufferings of the brave soldiers. That was done by Florence Nightingale.

The little girl who had nursed the sheep-dog and bandaged her dolls now stood forth as England's Angel of Pity, and as long as England's history is written the name of Florence Nightingale will shine in golden letters on the page. She went to the Crimea with less then forty nurses, and in a few months she had made an absolute change in the nursing of the soldiers. Can you not imagine the peace that came to the poor wounded soldiers when they found themselves tended by gentle women, laid in smooth and comfortable beds, and felt tender hands which shrank from causing the smallest pain lovingly bandaging their throbbing wounds? Florence Nightingale was always in the wards, and at night she would go slowly between the beds, carrying a lamp in her hand, to see that her patients lacked nothing. The soldiers, looking through the darkness at the figure moving like an angel among them, called her "The Lady with the Lamp." Her name, it was found, contained letters enough to make the sentence "Flit on, cheering angel." That is what she was to those thousands of tortured soldiers in the Crimea —a cheering angel.

You will understand what wonderful work this noble woman did when we tell you that at the time of her coming forty-two men died in every hundred of the wounded, while soon after her arrival only two died in every hundred. She had as many as 10,000 wounded soldiers to care for, and when they had to be carried into the operating room—and you must remember that in those days there was no such thing as chloroform—Florence Nightingale would go with them, stay by their side and cheer them to bear their sufferings.

England heard of all this splendid work, and the name of Florence Nightingale became a household word in the land. A subscription was made for her, and £50,000 was raised as a gift. A man-of-war was sent to bring her home, and preparations were made for a glorious triumphal entry into London. But Florence Nightingale did not want fame. She went home secretly, and went quietly back to her father's house. And as for the £50,000, she thanked England for the gift, and used it to found a home for the training of nurses. Though her health was broken by the hardships that she had undergone, she lived for many years, and to the day of her death in 1910 there was nothing dearer to her than the work to which she gave herself as a little girl. She never asked for fame or glory; all she wanted was to do good, and to lessen pain and alleviate suffering was her greatest joy. To-day, thousands of women are following in her footsteps.

MISS FLORENCE NIGHTINGALE AND HER NURSES COMFORTING SICK SOLDIERS

THE NEXT GOLDEN DEEDS ARE ON PAGE 633.

WHAT THIS STORY TELLS US

WE know that life came out of the sea, and that its real progress began when it swam ashore, where life found the oxygen, of which it could not get enough in the sea. Without this oxygen life can have no warmth. If the oxygen in the air could be withdrawn, the warmth that stirs our blood would go with it—our blood would cool and we should die. All men and women, all land animals, have warm blood, which fishes have not. Fishes, therefore, cannot advance in life: they can never have life at its best and highest, because life is at its best only when it is warm. Yet, though life left the sea to get warm, it can keep warm only in water. That is one of the great wonders of life, and it is true that every living thing, a mouse in its hole, a lion in the forest, a lark in the air, a boy or girl at school, must have water in their bodies every moment, or die. So that, though life came out of the sea to get warm, it brought from the sea the very means of keeping itself alive.

WHY LIFE NEEDS THE LAND

CONTINUED FROM 378

WE have seen what happened to water-breathing life, and now we have to study air-breathing life. The first important thing is to make sure what the difference between the two kinds of life really means. What will be the result if a creature, instead of being able to use up a certain quantity of oxygen in every minute of its life, is able to use up, perhaps, ten times as much? All life, we must remember, is, in one way, a process of burning—of mixing certain materials with oxygen, just as we make coal mix with oxygen in a fire every day.

Now, so long as life could get only the very small amount of oxygen that is in water, it had nothing to spare for any kind of extravagance—that is a long word, but I think most of us will soon learn what it means. Its income, or pocket-money of oxygen, so to speak, was very small, and all of it had to go in necessaries. Certainly, there was nothing to spare for keeping it warm.

Of course, you understand that when I say this I am only making a comparison. But if you will think of a fish—a poor, dying fish, which you may pick up in your hand—and will compare it with your hand itself, you will see at once what I mean. One of the great differences between the fish and you is that the fish is cold and you are warm. We usually call the fish a cold-blooded animal, and contrast it with warm-blooded animals. Birds are the warmest blooded of all animals.

Now, the reason why life in the sea is cold-blooded is that these kinds of life use up only a very small amount of oxygen. There is so little oxygen to be had that the fish cannot use any of it for the purpose of keeping itself warm. And so the fish, like other cold-blooded animals, behaves, so far as its warmth is concerned, just like a piece of stone, or anything else that is not alive at all. If you have a number of different things in a room, and leave them there for some time, each of them will soon be just as hot as the others; if now you bring a tumbler of hot water into the room, it will get cold, and the other things in the room will get a little bit warmer, though you cannot notice it. The rule is simply that the amount of heat, or warmth, in any place spreads itself about over everything, so that no one thing is hotter or colder than any other. Now, this is what a cold-blooded animal, such as a fish, does. It is just as hot as its surroundings. If it is in very cold water, the fish is very cold; and if it swims into warm water, then it becomes warm too, but not warmer than the water.

Now, this is very serious for the fish, and for all cold-blooded animals.

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It is a serious matter for any living creature to be hot at one time and cold at another, and, indeed, to be almost always getting either hotter or colder, according to whether it is colder or hotter than its surroundings. It is always having to make new arrangements, and can never count on having things fixed. This, I believe, is the real reason, or, at any rate, one of the most important reasons, why no cold-blooded animal—no life in the water—can ever do such wonderful things as life on land. We shall soon see the other most important reason for this.

How life lights a fire to keep itself warm

For now let us contrast with the fishes the case of warm-blooded animals. The fish in your hand is cold, and your hand is warm; your whole body is warm, and that is why other things—unless they have been specially made hot—feel cold to your hand. The truth is that air-breathing animals can help themselves to as much oxygen as they please, so to speak, and after they have taken all they need for necessaries—which is all that the fish can ever get—they can help themselves to more for luxuries. And what they do with it is simply to light a fire within themselves—you know I do not mean the sort of fire that you have in the furnace—and so they keep themselves warm. The warm-blooded animal is hotter than its surroundings, because it is making quantities of heat inside itself with the help of the large supplies of oxygen it can get from the air.

Now, what is the good of this? Why is it that the warm-blooded animals are so much cleverer and more wonderful than the cold-blooded animals which we find in the sea, or than the humble cold-blooded animals which we find on the land, such as the frog? We shall not understand this until we ask ourselves what it means to be a warm-blooded animal.

The fire within all living things is kept steadily burning

It does not mean that the animal just makes itself as hot as it pleases—one day very hot, and another day not so hot. The great fact about the warm-blooded animals is that they are just as hot one day as the next, and as the day before. Very likely you have had your temperature taken with a thermometer when you were ill. Now, that is done because the doctor wants to find out whether you are too hot or too cold, or just as hot as you ought to be; for he knows, and everybody knows, that there is just a certain level of heat at which all healthy people must be all the time. The heat of the blood of a warm-blooded animal is a fixed thing—from minute to minute, from hour to hour, from hot day to cold night—it never varies, except to such a tiny extent that you can scarcely find it out. It is the same on the coldest day in winter and the hottest day in summer; it is the same whether you go as near the North Pole as you can, or to Panama, where the sun blazes. As long as you are well, your warmth is strictly fixed all the time.

Now, this is true not only of men and women and children, but also of all warm-blooded animals. The changes in their warmth, or temperature, as we say, are of the very tiniest kind, and when they *do* happen, last for only a very short time. It was only a few years ago that any instruments were made clever enough to show these differences in temperature, so small are they.

The fire burns all the time at the same heat

What is true of us is true of the dog and the cow and the sheep and the birds and all warm-blooded animals. The warmth, or temperature, of the fish goes up and down, down and up, according to whether the sun is shining on the water, or cold streams of water are coming in, and according to a thousand other things. A thousand things play also upon the warm-blooded animal, but it keeps its fire burning within it, so that, whatever happens, it is no hotter and no colder than it was before.

But it is not merely that the warmth of the warm-blooded animals—that is to say, of all the important life on land—is fixed. The other great fact is to be found in the point at which it is fixed. We might expect, perhaps, that a little bird would have a certain amount of temperature, and an elephant something quite different, and a man something different again. But when we come to compare the temperature of all the warm-blooded animals we find that it is just about the

same for every one of them. The birds are generally a very little hotter than other animals, but the difference is very small indeed. It is fair to say that all warm-blooded animals live at about the same point of warmth. Now, what do you think this must mean?

It means, we may be quite sure, that *there is a particular hotness, or temperature, at which life goes on best*, and since life is everywhere the same thing, whether we find it in a sparrow or an elephant, that particular point of warmth is about the same for both. When this heat is reached and kept, all the changes that go on in living matter do so with the greatest ease and success. So long as life lived in the water, which holds only a very little oxygen, it could never hope to reach this point of warmth at which it lives best. One or two fishes have been found which are always, it seems, a little hotter than the water around them, but only a very little.

It was not until the great step was taken to the land, and until living things learnt how to breathe air instead of water, and how to make the most of all the oxygen in the air—it was not until then that living creatures could keep themselves warm enough all the time to do the very best that is possible for them.

ANIMALS ON THE LAND THAT HAVE NOT LEARNED HOW TO USE THE OXYGEN

There are cold-blooded animals on land, but they are very humble and lowly creatures, and they suffer from just the same difficulties as the fishes, getting hotter and colder, one or the other, almost all the time. These cold-blooded animals have not learnt how to make the best use of the oxygen of the air. They have not lit a fire within themselves to keep themselves warm, and so they cannot do so much work, or such good work, as the higher or warm-blooded animals.

We cannot say much more at this time about the great world of plants, except to notice only one very important fact about plants, which is that without them animals cannot live. But it is interesting to remember that, though the plant-world also has covered the land as well as the bottom of the sea, it has not taken any advantage of the large supplies of oxygen in the air. It only breathes very slowly indeed, and though some plants, like some fishes, are sometimes found to be rather hotter than their surroundings, they are never very much hotter, and they never come anywhere near the point of heat which we find in all the warm-blooded animals. When life reached the land, it had done all there was to do, so far as the place it lives in was concerned—simply because it had reached the place where the most oxygen is to be found. There are other very great advantages of living on land, but this is the real one.

LIFE'S STEP INTO THE AIR IS NOT OF GREAT IMPORTANCE

You might think, perhaps, that yet another great step was taken when life left the land for the air, as in the case of the birds; but this is not really a step of any great importance. Animals that do not fly live just as much in the air as the birds do. It is true that birds spend much of their time actually in the air, and can swim about in the great ocean of air, while we can only crawl about at the bottom, unless we trust ourselves to a ballon or a flying machine; but, of course, the bird really lives on land just as much as we do. It does not sleep in the air, and it does not make its nest in the air. The real beauty of the bird's life is that, though its home, like ours, is on the land, it can soar about in the air when it pleases.

So really there is only one great step, so far as mere place is concerned, in the story of life, and that is the step from the water to the land. The bird is really a land animal, and though it can soar, it never really roams from its home on mother earth.

MILLIONS OF LIVING THINGS ON LAND NO BETTER THAN THE FISHES

Now, we have spent some time in seeing why it is that the step from the water to the land was so very important. We must not forget, however, that there are hosts of living creatures on the land which are not warm-blooded, and which are really no higher and better, and are often, indeed, much lower, than the creatures which live in the sea. In the first place, we have seen there are all the land plants; in the second place, there are not only many animals which, as we shall see afterwards, are really higher than the fishes—frogs, lizards, serpents

—but there are also millions and millions of insects which, though they live in the air, are really much humbler animals than the fishes. These last are, of course, cold-blooded; and, indeed, it is not quite right to speak of their having any blood at all, for their blood is not like ours.

In the world as we know it to-day, life is to be found wherever life can be, and as much life as the amount of air, and food, and water make possible. Wherever life can exist at all, there we find just so much life as there is room for, whether in the sea or on land. But though already the earth is filled with life, this is by no means to say that it is filled with the best and highest life; on the contrary, the greater part of the life on earth, compared with the highest life, is humble and far from beautiful, but, as time goes on, the great fact is that these low and humble forms of life are giving place to higher forms. This, perhaps, may not be true of the sea, but it is certainly true of the land.

THE ONLY KIND OF LIFE THAT IS ALWAYS GOING FORWARD

There is only one form of life on the earth that steadily and certainly and naturally increases, and that is human life. All the other kinds stand where they were. Accident may cause one kind to increase for a time, then another accident will cause it to decrease. But from age to age there goes on the steady increase of man, as it has been going on for thousands and thousands of years in the past. There are more men, women, and children in the world when I write these words to-day than there were yesterday; and there will be many, many more when you read these words than when I wrote them. This wonderful fact never stops; it never has stopped since man first appeared on the earth, and we cannot say when it will stop, though plainly it must stop some day. Meanwhile, though everyone knows it in a kind of way, it is one of the biggest facts in our lives, in the story of the earth and in its future, and they are very stupid people who allow themselves to forget it. As we go on increasing we take the place of low and humble forms of life, and, indeed, we make all other forms of life serve ours, including even the life of the sea.

Now, if we compare this chapter with the last, we shall see that all the great part of the history of life is to be found on the land, or, rather, it is that part of the history of life which is lived in air and not in water. But though we shall not have very much more to say about the life in the waters, we must never forget what we said at the beginning—that life is something which always happens in liquid, or wet, water, and never anywhere else.

WHAT THE LARK TAKES WITH HIM UP INTO THE SKY

This is true not only of animals or plants that live in water, but also of those that live in air: and it is as true of the lark soaring in the sky as it is of a flat fish lying at the bottom of the sea. When the lark goes up in the sky he takes with him all the liquid water in his body, and it is really in that liquid water that his life is lived. Take it away, and the lark must die; and this is true of every living thing.

So we must remember that even though the first stages in the story of life, which were lived in the water, and also the life in the water now, are quite unimportant compared with the life which is lived in air, yet, in order that there shall be any life in air or on the land, liquid water must be carried wherever the living thing is to be. A clever Frenchman has quite lately made a study of the water in the bodies of animals, and he has shown that this water has in it a quantity of different kinds of what are called salts, the most important being the ordinary salt of the dinner-table. These salts are the same as are found in sea-water, and occur in just about the same amounts.

WE MUST NEVER FORGET THAT LIFE CAN LIVE ONLY IN WATER

I think that it is a most wonderful thing to have found this out, for it teaches us that, whatever life may do on land, it is yet something which is lived in what is very much like sea-water; and even when most of the sea is dried up, and the earth becomes smooth with land, like our wonderful neighbour in the sky, called Mars, I do not doubt that life will still be lived in that common but wonderful thing which we call water.

THE NEXT PART OF THIS IS ON PAGE 671.

RUM-PEL-STILT-SKIN

CONTINUED FROM 505

IN a certain kingdom once lived a poor miller who had a very beautiful daughter. She was, moreover, exceedingly shrewd and clever; and the miller was so vain and proud of her that one day he told the King of the land that his daughter could spin gold out of straw. Now, this King was very fond of money, and when he heard the miller's boast he ordered the girl to be brought before him. Then he led her to a chamber where there was a great quantity of straw, gave her a spinning-wheel, and said, "All this must be spun into gold before morning, as you value your life."

It was in vain that the poor maiden declared she could do no such thing; the chamber was locked, and she remained alone.

She sat down in one corner of the room and began to cry, when the door opened, and a droll-looking little man hobbled in, and said, "Good-day to you. What are you weeping for?"

"Alas!" answered she, "I must spin this straw into gold, and I know not how."

"What will you give me," said the little man, "to do it for you?"

"My necklace," replied the maiden.

He took her at her word, and set himself down to the wheel. Round about it went merrily, and presently the gold was all spun.

When the King came and saw this he was greatly astonished and pleased; but his heart grew still more greedy, and he shut up the poor miller's daughter again with a fresh task. Then she knew not what to do, and sat down once more to weep; but the little man presently opened the door, and said, "What will you give me to do your task?"

"The ring on my finger," she replied. So her little friend took the ring, and began to work at the wheel, till by the morning all was finished again.

The King was vastly delighted to see all this glittering treasure; but still he was not satisfied, and took the miller's daughter into a yet larger room, and said, "All this must be spun to-night; and if you succeed you shall be my Queen."

As soon as she was alone the dwarf came in, and said, "What will you give me to spin gold this third time?"

"I have nothing left," said she.

"Then promise me," said the little man, "your first little child when you are Queen."

"That may never be," thought the miller's daughter; and as she knew no other way to get her task done, she promised him what he asked, and he spun once more the whole heap of gold. The King came in the morning, and, finding all he wanted, married her.

At the birth of her first little child the Queen rejoiced very much, and forgot the little man and her promise; but one day he came into her chamber and

reminded her of it. Then she offered him all the treasures of the kingdom in exchange; but in vain, till at last her tears softened him, and he said, "If in three days you can tell me my name you shall keep your child."

Now, the Queen lay awake all night, thinking of all the odd names that she had ever heard, and despatched messengers all over the land to inquire after new ones. The next day the little man came, and she began with Timothy, Benjamin, Jeremiah, and all the names she could remember, but to all of them he said, "That's not my name."

The second day she began with all the comical names she could hear of, Bandy-legs, Hunchback, Crookshanks, and so on; but the little gentleman still said to every one, "That's not my name."

The third day came back one of the messengers, and said, "Yesterday, as I was climbing a high hill among the trees of the forest where the fox and the hare bid each other good-night, I saw a little hut, and before the hut burnt a fire, and round about the fire danced a funny little man upon one leg, singing:

Merrily the feast I'll make,
To-day I'll brew, to-morrow bake;
Merrily I'll dance and sing,
For next day will a stranger bring;
Little does my lady dream
Rum-Pel-Stilt-Skin is my name!"

Then the Queen jumped for joy; and as soon as her little visitor came she said:

"Is your name John?"

"No!"

"Is it Tom?"

"No!"

"Is it Rum-Pel-Stilt-Skin?"

"Some witch told you that!" cried the little man, and dashed his right foot in a rage so deep into the floor that he was forced to lay hold of it with both hands to pull it out. Then he made the best of his way off, while everybody laughed at him for having had all his trouble for nothing.

THE GEESE WHO KEPT GUARD OF ROME

ROME was besieged. An army of tall, fierce warriors, with blue eyes and golden hair, from the land of Gaul, had swooped down upon her, and forced their way within the gates of the great city itself.

Fierce battles were fought in the city, and the legions of Rome found themselves driven back again and again. The Gauls were not only strong—they were fearless. They rushed on the Romans with terrible shouts, and tore their ranks in sunder.

At last the poor Romans were forced to retire to their last fortress, called the Capitol. They were safe here, for who would dream of climbing up the steep rock to force the mighty walls of the Capitol? But sad and dreadful was it for the Roman soldiers, though they were safe, to look over the walls of their fortress and watch the savage Gauls burning their homes and carrying off all their precious things as booty.

The Romans began to be dreadfully hungry. Many a time they must have looked at the sacred geese which lived in the Temple of Juno, and thought it would be no crime to kill and eat them. But the geese were sacred birds to the Romans. To kill them would be sacrilege.

Now, it chanced one night, as a brave young Roman named Manlius lay sleeping beside his sword near the Temple of Juno, that a strange sound striking across his troubled dreams woke him suddenly out of slumber, and made him grasp his sword and spring to his feet.

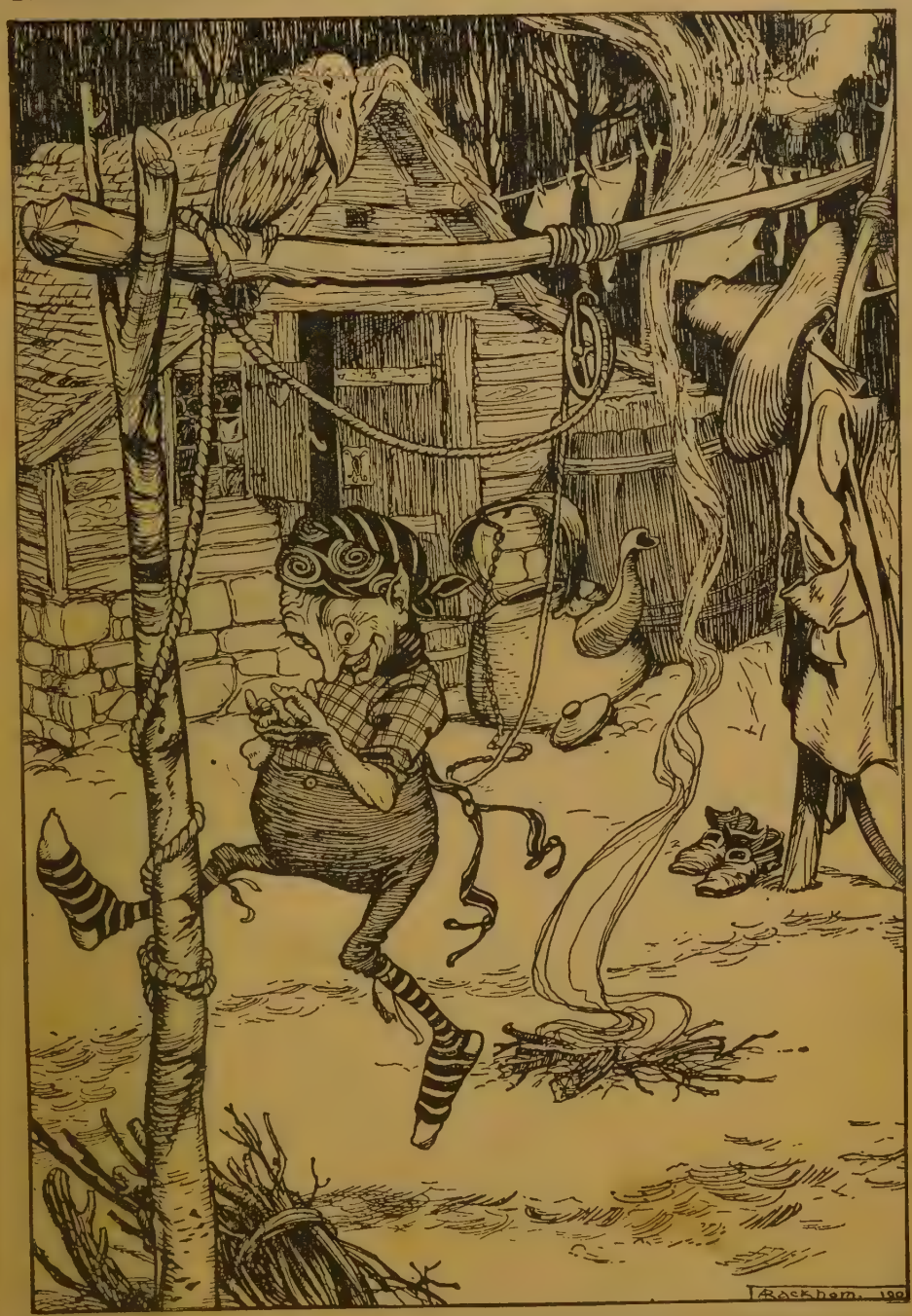
He recognized the noise at once. It was the hissing of the sacred geese. What could have roused those birds?

The noise increased; it became a panic of alarm; the whole flock was filling the night with its frightened cry.

Manlius ran to the walls of the fortress and looked down. He came face to face with a Gaul!

The leader of the Gauls had led his men up the pinnacle in a night attack, and he was just about to pull himself over the wall when Manlius appeared. In an instant Manlius seized the straining wrists of the Gaul, and, wrenching the fingers free of the parapet, hurled the enemy down the hill.

Louder and louder grew the night clamour of the geese. Romans started from their sleep, and, snatching their arms, hurried to see what it could be. They found Manlius defending the walls. With a shout of victory they rushed to his rescue, and in a few minutes all the garrison was roused, and the Gauls were beaten back and utterly routed.



When the Queen was rejoicing over the birth of her baby, the little old man who had helped her to spin the gold came and threatened to take away her son unless she found out his name within three days. She thought of all the names she could, and she sent messengers all over the country to find out other ones. On the third day came good news. "Yesterday," said the Queen's messenger, "as I was climbing a high hill among the trees of the forest, I saw a little hut, and before the hut burnt a fire, and round about the fire danced a funny little man upon one leg, singing, 'Rum-Pel-Stilt-Skin is my name.'"

THE MAGIC BOY FIDDLER OF SICILY

PERO was a merry, simple lad, and he lived in a village in the beautiful island of Sicily. His parents died when he was young, and at the age of fourteen he set out to make his fortune. He wandered about the country, and at last a miserly old farmer engaged him as a goatherd. But Pero forgot to arrange about wages, and when, at the end of the three years, he asked his master to pay him, the miserly old farmer gave him only threepence. But Pero went away as light-hearted as ever. On the road he met a beggarman, who said:

"My son, I am starving. Give me something to buy some bread."

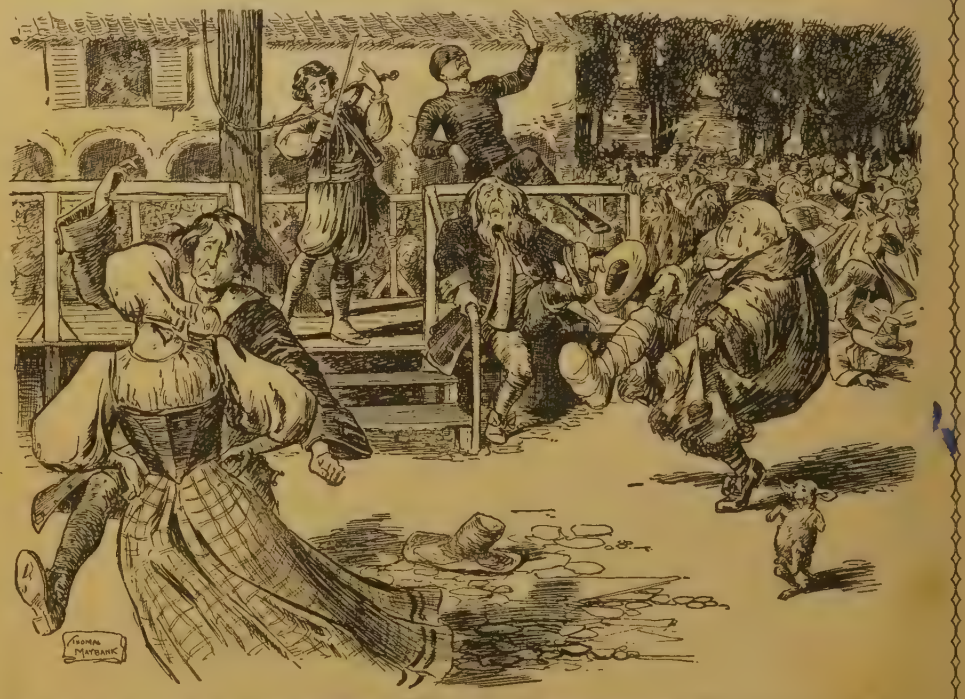
"You can take my wages," said Pero, "and I will go back and serve three years more."

"You are really as kind as you are simple," said the beggarman, and as he spoke he changed into a bright spirit. "I give you three wishes. Ask and you shall have."

"Well," said Pero, "give me, please, a violin that will make everybody dance, and a gun that will never miss, and the gift of speech, that nobody can refuse me anything."

The Spirit granted Pero these wishes, and Pero turned back to the farm. Seeing a pheasant fly by, he fired at it to test his magic gun. The bird fell, but before he could pick it up the farmer ran out and seized it.

"Well," said Pero, "you can have it if you like to dance for it."



Pero, with his magic fiddle, was traveling in Sicily, and fell among enemies, who resolved to hang him. But just as Pero was going to be hanged he played on the magic violin that made everybody dance, and the magistrate and the hangman and all the spectators danced to his playing. He played till they were weary, and the magistrate promised at last that if Pero would stop playing he should go free.

He played on his violin, and the farmer capered like a madman.

"Stop, Pero!" he cried at last. "I treated you badly, I know; but stop, and I'll give you a thousand crowns."

Pero received the money, but as soon as his back was turned the farmer ran to the magistrate and denounced him as a robber. There was little mercy for robbers in Sicily in those days. Pero was quickly arrested, tried, and con-

demned. But just as the hangman was putting the rope round his neck he asked the magistrate to let him play one tune on his violin.

"Don't give him the violin!" cried the farmer.

But Pero had the gift of speech, and nobody could refuse him anything. The magistrate gave the violin to him, and Pero played on it, and the magistrate and the farmer and the hangman and the spectators danced to his playing. He played till they were weary; he played till they were worn out; he played till the soles came off their boots, and still he played. And the magistrate at last promised that if he would stop he should go free. Pero then came down from the scaffold, and took his gun and his violin and his thousand crowns, and returned to his native village, and, having the gift of speech, he won the prettiest girl in Sicily as his wife, and settled down contentedly.

THREE NIGHTS IN THE ENCHANTED CASTLE

ONE summer there was a great drought in Spain, and when autumn came there was no harvest. Many peasants wandered about the country in search of work and food, and among them was a good-looking, brave lad whose name was Juan Lopez. His mother and father were dead, and his master was ruined, and he had nowhere to go to.

One evening Juan came, hungry and homeless, to the town of Granada, and, finding no other lodging, he settled down to sleep amid the green ruins of an ancient Moorish castle. But just as he closed his eyes he felt a tap on his shoulder. Looking up, he saw a hand holding a lighted candle. It beckoned to him, and as Juan was desperate with hunger he followed.

The hand led him into a gorgeous hall where a table stood loaded with exquisite delicacies, and there Juan feasted to his heart's content. The hand then beckoned again, and led Juan into another splendid chamber with a bed in it. Juan took off his ragged clothes, and put on a silken nightdress which he found lying on a heap of rich garments, and got into the bed, and went asleep.

When the bells of Granada struck twelve, the hand came and awoke him, and a sweet voice said;

"It was very brave of you, Juan, to follow my hand. You are the first who ever dared to do so. Now, will you show yourself braver still, and set an unhappy, helpless maiden free from a wicked spell?"

"What must I do?" said Juan.

"You must stay in this bed for three nights and days," said the voice, "and you must not move or cry out, no matter what is done to you."

"Very well," said Juan, "I will see if I can stand it."

On the first night a troop of spirits came with bludgeons and beat poor Juan until there was not a sound bone in his body. But in the morning the hand appeared, and brought him refreshment, together with a magic salve which cured him of his hurt.

On the second night the spirits wounded him again, but he neither moved nor cried out; and the next morning the hand brought him a magic medicine which healed him. The ordeal of the third night was fearful, and no hand appeared at the break of day. But there came instead a princely maiden, who bathed Juan with a magic water that made him hale and whole again.

Juan then put on the rich garments, and went into the hall where the table stood, and feasted with the maiden. She was wonderfully lovely, and her loveliness was of a kind which Juan had never seen before. Her skin was of a creamy tint, with a deep rosy color showing beneath the cream; her little mouth was like a scarlet flower; and her dark eyes were large and liquid and tender, like the eyes of a beautiful fawn.

"Surely you are not a Spanish lady?" said Juan.

"No," said the maiden. "I am the daughter of the Sultan of Morocco. And now that the spell is removed I must return at once to my father's palace. Follow and find me."

She vanished, and Juan found himself sitting, ragged and poor, amid the green ruins of the castle.

He bravely set out to follow the

Princess, but as he had no money to pay his way it was a very long time before he reached her palace. The Princess thought he was faithless, and she arranged to marry the King of Arabia; but as she was getting into the wedding coach she saw Juan standing, poor, ragged, and sorrowful, by the palace gate.

"Some time ago," she said to the King of Arabia, "I lost the key of my jewel-case, so I got a new one. Now I have found the old key; which shall I use?"

"You should use the old key," said the King of Arabia.

"Here is the old key I meant," said the Princess, taking Juan by the hand. "It was this brave, handsome boy who rescued me from the enchanted palace. So I will marry him, and you, O King, must find another bride."

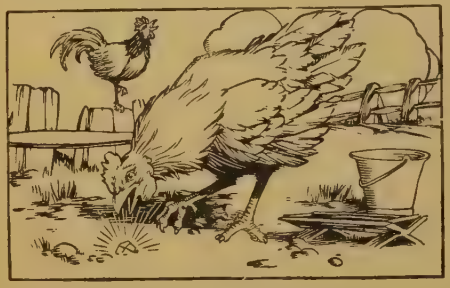
And marry Juan she did. The King of Arabia, who was really a generous man, gave the happy bride and bride-groom a magnificent wedding present, and they lived happily together.

THE FABLES OF ÆSOP THE SLAVE

THE FOWL AND THE JEWEL

A fowl searching for food found a precious stone.

"A great many people would be pleased to have this," he said, "but if I had all the jewels in the world I would willingly give them for one small barley-corn."



He could eat the barley-corn, you see, but the jewel, of course, was useless to him.

The best thing in the world is worth nothing to you if you have no use for it.

THE WOLF AND THE CRANE

A wolf, when eating his dinner one day, swallowed a bone, which stuck in his throat. He went about howling, asking every animal he met to help him, and promised a large reward to anyone who could get the bone out. At last a crane, who had a long, slender neck and bill, undertook the task.

Poking his long neck down the wolf's throat, he got hold of the bone and pulled it out; but when he asked for the reward the wolf laughed and said, "You may think yourself lucky that I did not bite your head off when it was in my mouth."

Some people are like this wolf. They are not grateful when anyone does them a kindness.

THE DOG AND THE SHADOW

A dog was once walking along a plank over a stream, carrying a piece of meat in his mouth. Looking down, he saw his own shadow reflected in the clear water. Thinking it was another dog carrying another piece of meat, he was so greedy that he snatched at it. This caused him to open his mouth, and the meat fell out and sank to the bottom of the stream.

People who try to get what belongs to others often lose more than they gain.

THE FOX AND THE GRAPES

A hungry fox happened to come one day into a vineyard where there were plenty of fine ripe grapes. Unfortunately for him, these grapes were growing on a trellis so high up that, though he leaped his utmost, he was not able to reach them.

"Oh, well, never mind!" said the fox. "Anyone can have them for all I care. They are sure to be very sour."

People very often pretend to dislike things that they are not able to get.

THE NEXT STORIES ARE ON PAGE 719.

PRINCE JUAN AND THE CAPTIVE PRINCESS

On the third day of Juan's life in the enchanted castle came a princely maiden, who bathed Juan with a magic water that made him well again. He put on the rich garments and went into the hall where the table stood, and there feasted with the maiden. "I am the daughter of the Sultan of Morocco," she said. Then she vanished, and Juan followed her to her father's palace, where he made the princess his bride.

OLD FAITHFUL GEYSER AND INN

Some geysers in Yellowstone Park are very irregular and the visitor may easily miss seeing them in eruption. Old Faithful, however, can be depended upon. The time between eruptions is from an hour, to an hour and a half. The usual period is an hour and a quarter, and the eruption lasts four minutes.

There are several hotels in the Park, all under the supervision of the government, which fixes the rates they may charge the travelers. This is Old Faithful Inn, named from the geyser near by. The hotel is built entirely of logs and stone and is very attractive. Within a short distance are several other geysers. There are few places where a vacation can be spent more pleasantly than in Yellowstone Park.

Pictures by courtesy of the Northern Pacific Railroad.

WHAT THIS STORY TELLS US

ONE of the most wonderful playgrounds in the United States, or in the world for that matter, is the Yellowstone National Park. It is under the control of the Department of the Interior, and contains interesting scenery of many kinds. The great geysers and the hot springs are like nothing else in this country. The canon of the Yellowstone River is both beautiful and awe-inspiring. Besides these there are over three thousand three hundred square miles where game of every sort ranges unafraid. No hunting is allowed and elk, antelope, buffalo, bears and mountain sheep and many smaller animals are all to be seen. These animals know they will not be troubled.

YELLOWSTONE PARK, WONDERLAND OF THE WEST

CONTINUED FROM 533

THE Yellowstone National Park lies almost entirely in the state of Wyoming. It was set aside for the use of the people in 1872, and since that time has been under the control of the United States government. There are more than 3,300 square miles of it, and perhaps nowhere else in the world are so many wonders of nature to be found in such a small area.

MAMMOTH HOT SPRINGS WITH THEIR WONDERFUL COLORS

We shall enter the Park from Gardiner, Montana, through the Northern Entrance Gate. We travel in a stage or a motor car through five miles of wild mountainous country until we come to the Mammoth Hot Springs. Here we dismount and follow the guide among the springs.

"The colors! Oh, the marvelous colors!" we exclaim in breathless astonishment, as our eyes wander from the transparent turquoise of the mist-hung pools to the fretted rims of red and orange, of green and velvety brown, over which the warm water slowly trickles, and from these to the dazzling whiteness of the crusted earth beyond, "as pure and clear as any snow field of the Alps." "The lovely tint of the terrace basins is due to a plantlike organism that lives in the hot water," our guide explains.

From Mammoth Hot Springs we proceed in the coach by slow and easy stages through a wild, strange place, called the "Hoodoos," or Goblin Land, which tradition says was formed by the Devil sliding down one mountain and his Satanic Majesty's wife down another. The result was this strange region called the Hoodoos. In reality this gruesome place was in all probability formed by a mountain which caved in, partly filling the cavern below. Of late years the government has constructed a road through Goblin Land, but owing to the deep caverns over which it is built this highway sometimes gives way.

Twelve miles beyond Mammoth Springs we drive over a roadway built out of solid glass about the base of Obsidian Cliff. On one side of us lies Beaver Lake, its quiet waters giving us back a picture of the pine-clad hills of its opposite shore, while on the other side of the roadway rises a glistening mirror-like mountain of jet black polished glass. The roadway about the base of this glass mountain was built with great difficulty. As blasting powder could not be used, fires were built around the huge blocks of obsidian, and when the glass expanded with the heat, cold water was dashed upon their surface, shattering the blocks into small pieces.

We are on our way to see the

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geysers. A geyser has been called a water volcano, and perhaps this is as good a description as we can get. Down deep in the earth the hot water collects and the steam becomes so compressed that something must give way. The water on top is forced out, sometimes with great force. The geyser is then quiet for a time, until the pressure again becomes too great, and then there is another eruption.

Driving on we come at last to the Norris Geyser Basin, where the first sight that attracts our gaze is a vast spring of pale blue water called the Congress Pool. It is sometimes quiet, sometimes boiling, and has at different times thrown out mud. We branch off from Congress Pool a little way on foot to visit the Monarch, the king of geysers, in the Norris Basin. We find its mouth, out of which issue puffs of steam and little spurts of boiling water, situated at the foot of a hill of brilliantly colored rocks. But the geyser is not in action, and as it is very irregular, we mount the coach and hurry on to the Lower and the Upper Geyser Basins, hoping for better fortune there.

HELL'S HALF ACRE

Here we dismount and visit a place very aptly termed Hell's Half Acre. So gruesome, so awe-inspiring to the ordinary mortal are the freaks of Nature found in Yellowstone Park that they are almost unconsciously linked in one's mind with the Evil One and his abode. Truly this last region is most suggestive of the place the name of which it bears. Dense masses of steam overhang the land, and a sulphurous smell rushes up our nostrils, leaving us choking and gasping. The air is filled with hissing noises and the very ground on which one treads is hot. We follow the guide, stepping gingerly over the volcanic crust, until we come to a ridge of small basins, which heave and sputter with pasty clay of every imaginable color,—rich cream, vivid orange, brilliant blues, violets and purples, the Mammoth Paint Pots.

We turn with a feeling of relief from the Paint Pots to visit "Excelsior," the largest geyser in the world. It has been quiet for a long time and we only see a great opening filled to overflowing with boiling light blue waters, surrounded by crusted walls of pearl-like whiteness.

Another geyser of great interest to visitors in this vicinity is the Great Fountain, whose crater is about twenty feet around, and into whose clear blue water we can peer down at least fifteen feet, watching the bubbles coming up from the deeps and breaking on the surface. It plays two or three times a day.

MORNING GLORY SPRING

But most wonderful of all the hot springs is the Morning Glory, which we see when at last we reach the Upper Geyser Basin. It is truly marvelous for the richness and variety of its coloring. "Imagine, if you can, a pool of water, about two feet in diameter, and formed after the shape of the morning glory you have seen in the fields. Imagine those selfsame colors, a little deeper in tone, transferred to this pool, or rather, perhaps, imagine Nature dipping her brush into the delicate tints of an autumn sunset and painting them upon the sides of this pool. Then imagine the whole filled with crystal liquid—we will not call it water, it is far too clear—that gives one the feeling of being solid air—and you have before you the Morning Glory of the Yellowstone."

But the hot springs, with their sudden, blinding puffs of vapor and the thin, uncertain crusts about their rims deceptive to the unpracticed eye, are as dangerous as they are beautiful. There are many of these boiling pools of water, that sometimes shade off in colorless, clear ripples over the gray sinter. One writer tells of a pitiful little tragedy among the wee creatures of the Park. "Walking along the shore one day," he says, "a baby sandpiper, unmindful of danger, was seen to step into the treacherous pool, where it cheeped feebly to the distressed mother bird, and in an instant was floated off, dead, a tiny ball of fluffy feathers." Small animals are not the only things that are injured by these boiling pools. Cases have been known where people have tumbled into the scalding water and have been seriously injured and in some cases killed.

There are many geysers worth seeing in the Upper Geyser Basin, for it is the

SOME MARVELS OF THE YELLOWSTONE

Here is a picture of the Mammoth Hot Springs in Yellowstone Park. Notice how the pools, filled with water which almost boils, rise above one another in terraces. The water of the springs is a deep blue in the centre, and where it flows over the edge of the basins a thousand colors show, rainbow-hued, in the sunlight. Over the terraces hangs a mist of steam, and beyond are the everlasting hills.

This is the crater of the Castle Geyser, one of the oldest active geysers in Yellowstone Park. The Castle has the largest cone in this whole region. It shoots up boiling water into the air to the height of fifty to seventy-five feet, accompanied by a great roar and mighty columns of steam. Eruptions of the geyser occur about every twenty-four hours for several days. Then it is quiet for a few days.

OTHER SIGHTS OF THE YELLOWSTONE

This beautiful road built into the side of the cliff is in the Golden Gate Canon on the way from Mammoth Hot Springs to the Norris Geyser Basin. The roadbed which juts out is built of concrete.

This high pillar of stone is called Eagle Rock. By a fortunate chance an immense eagle was just alighting when the picture was being made. Note the many different layers of rock in the high pinnacle.

There are more bison or American buffalo in the Yellowstone Park than anywhere else in the United States. They live under natural conditions and are increasing in numbers. This small herd is near Mammoth Hot Springs, but the larger herd, several hundred in number, is more than thirty miles away.

Pictures by courtesy of the Northern Pacific Railroad.

largest and most active geyser region in Yellowstone Park, if not in the world. We shall not have the time to visit them all, but we must see the Giantess, considered to be one of the most important geysers in the Park. Its eruptions occur irregularly, five to forty days apart, and we give a description of the Giantess in action in the words of one who saw the display. "News of the eruption spread rapidly," he writes. "Every one hastened to the brink of the great pool that was now boiling and acting as though a thousand furies were busily stirring its waters. At times the earth shook and trembled and in the centre of the pool a mass of water shot upward a few feet and then fell back into the seemingly bottomless cavern. Every moment the water became more agitated and loud groans, as of a giant in distress, broke the almost solemn stillness. At last the time came. Quicker than I can write the entire pool was lifted bodily into the air. Higher it ascended and still higher and then shooting upward from the earth the great body rose, a solitary column, the top of which we could not see. The roar was deafening; the clouds of vapor rolled away towards the forests; streams of boiling water ran headlong to the river close at hand. The scene was one of awful beauty. It cannot be described. Its terrible fascination cannot even be imagined."

We try to imagine this scene as we stand by the Giantess, but we only see the gurgling hot water lapping against the sides of the mighty crater, and get puffs of its steam in our faces as the wind blows it in our direction. But though we cannot see the Giantess in eruption, there are many other geysers in the upper basin that are in constant activity. "Old Faithful" is worthy of its name. At intervals of about an hour, with little variation, it pours a mighty column of boiling water and steam; and then sucks it again into its bottomless pit to pour it forth once more. We stand afar off and watch the sunshine playing rainbow lights upon the cloud of steam.

Leaving Old Faithful, we make a hurried trip to several other noted geysers,—the Castle, the Giant, the Bee Hive, the Lion, the Lioness and the Cubs. If we are lucky we may see one of them in action, but we can seldom know exactly when to expect an eruption. Everywhere a heavy steam hangs warm and moist in the air. The constant roar and grumble of these geysers, combined with the gurgling and chafing of the boiling springs becomes frightful to us.

Leaving the geysers, we turn toward Yellowstone Lake, and come at last to the Upper Falls of the Yellowstone. Two-thirds as high as Niagara, it shoots over the rocks in mighty jets of water and spray, and striking the stones below, gives back a thousand rainbow tints in the light of the setting sun. We do not say anything. We have no words to express the sense of the grandeur and beauty of the place that sinks into our very souls. A short distance beyond we come to the Lower Falls, whose waters, descending from a height twice that of Niagara, thunder over the precipice in a roaring, foaming flood of green and amber. We travel on up the Cañon, and take our stand at last on a rocky ledge to watch the night descend upon the Wonderland. Below us, between rock walls, the Yellowstone River flows for miles until it becomes a narrowing ribbon of green disappearing into the distance.

There is much more to see in the Park. There are beautiful little lakes among the hills; the Tower Falls are almost as wonderful as those we have already seen; and we may turn aside to the petrified forests near by. For twenty miles along Lamar River are many stumps and trunks of trees which have been turned into stone. Specimen Ridge, which rises sharply out of the valley floor, is composed of beds of these forests one above the other.

Nor is this all. Yellowstone Park is the largest refuge for wild animals in the world. No hunting is allowed, and thousands of elk, antelope, and moose, hundreds of buffalo, and many bears, brown, cinnamon and black, wander unafraid of man. They know that they will not be harmed. Even the dreaded grizzly; which is not often seen, does not attack men, unless provoked. Fishing is allowed and the Park is a paradise for the angler. One may remain weeks in the Wonderland and then fail to see all that is interesting.

CONTINUED ON PAGE 779.

KING JOHN SIGNING THE GREAT CHARTER

King John was such a bad king, and brought England into so much trouble, that the barons and bishops forced him to grant a great charter to the people, promising to maintain their rights. There is a little island on the Thames, near Windsor, called Runnymede, where John met the barons to sign the Charter. John was furious, and it is said that he threw himself on the ground and gnawed bits of wood in his rage.

THE HISTORY OF ENGLAND

THE Normans left their mark on England, and their influence works in our life even now. But it was not all real progress after the death of the Conqueror. There were still fightings for the crown, and the throne was all the more insecure because the Kings of England ruled over provinces in France stretching away to Spain. The Conqueror was succeeded by his son, William Rufus, who was succeeded by Henry I. and Henry II. Then came Richard, who was nearly always away fighting. After Richard came John, a bad king, whose reign is important because the real power of the people then began. The barons forced John to sign the Great Charter which gave England freedom and good laws. John's son Henry became king at nine years old, and in his reign the people took another great step forward by founding Parliament, the Great Council of all the people, which has grown until, in our own day, it is the chief power in the land.

THE BEGINNING OF FREEDOM

CONTINUED FROM 473

WHEN Taillefer, the minstrel, led the Normans to victory at Hastings, tossing and catching his long sword as he rode forward on his gay, prancing horse, the words of his bold song were in French. What a roar of deep bass voices as the whole army behind him took up the air!

When the voice of the archbishop rang out in Westminster Abbey two months later, on Christmas Day, asking if it were the will of the people that William should be crowned King he spoke first of all in French.

But, you say, all this happened more than 800 years ago; how do you know what they said, and in what language?

Look again into that case in the British Museum, where we saw the actual message from the past, in the story of Bede, and in the Anglo-Saxon Chronicle. You will remember that the opened pages tell of the "Angel" boys at Rome, and a great victory over the Danes.

Next to the Chronicle comes a history of the Norman Conquest, in French, written by a man who knew many of those who had fought in the great battle. For many years authors wrote in French, because the king and his court, and nearly all the richest people in England, spoke French. There is an old poem written for the children of those times, in French, with English meanings below, just as in the French lessons in this book. The writer of long ago says that he has so arranged it in order that the children may understand what they are reading, and when to use "son et sa, mon et ma, le et la." Even the accounts of what was done in the law courts, and at the meetings of the Wise Men, who helped the King to govern the country, were all in French. But the use of the language spoken by Bede and Alfred did not die out, as some thought it would, any more than did the English nation, sorely oppressed as it was. By slow degrees the English and their language rose again; Normans married English wives, and naturally their children and grandchildren spoke both French and English.

Slowly the use of French as a separate language passed away, but the English language which we speak now contains many words brought over by the Normans.

Amongst other traces left by the Norman conquerors are the strong square towers, or "keeps," to be seen not only by the banks of the Thames, but at Norwich and Rochester, and many other places. Most of them look strong enough now to stand a siege, and take us back to the days when the nobles shut themselves up in them, and sallied out to make prisoners and to steal and plunder. There was

no redress for the unhappy neighbors. We have already looked at the beautiful little Norman chapel in the Tower of London, where the Conqueror and his family are believed to have attended service, and all over England and the south of Scotland we can find examples of the round arches and beautiful moldings which go towards making what is called the Norman style.

THE MONUMENTS AND PICTURES OF THE NORMAN TIMES

Some of the abbeys and cathedrals are still standing, having been repaired and added to through the centuries since the time of their founding; others are in ruins, without roofs, with grass and ivy showing up green against the grey stone. If we cross over to Normandy, we find many more of these buildings in the old home of the Normans; at Caen, where the Conqueror lies buried, and whence stone came in barges up the Thames to build old St. Paul's; at Bayeux, where the famous tapestry is kept; at Rouen, the old capital of Normandy, and hundreds more.

As we look out these places on the south side of the Channel let us think of the amount of coming and going there was across this "arm" of the sea, which lay in the midst of the dominions of the Dukes of Normandy, who were also Kings of England. Barons and soldiers were constant travelers, for wars were unending then; traders, too, came and went; workmen and builders; fair ladies as brides, as well as the kings themselves, who had often to cross from side to side to look after their possessions. The pictures of the ships of those days, so beautifully painted by the monks in monasteries, suggest small comfort on board, and very little room.

THE KNIGHT WHOSE ARROW KILLED A KING, AND WHO FLED IN FRIGHT

There was a man who fled over the Channel from Southampton in the first year of the twelfth century who must have felt in desperate anxiety for his ship to move quickly. He was a knight, who had been hunting in the New Forest with the Conqueror's son, William, called Rufus, or Red, on account of the color of his hair. Either by accident or not, the arrow he shot killed the king, and the knight was so frightened, he rushed away to Normandy. You can see the stone set up in the beautiful forest, to mark the spot. But there was no mourning for the Red King; people were glad and thankful when he died.

His brother, Henry I., was king after him. His nickname was Beauclerc, the French for fine scholar. He began well by giving his people, three days after his brother's death, a letter, in which he promised to set right the bad rule of his brother's time, and to keep the laws of Edward and Alfred.

There are many of these letters, or charters, that we can see in the Manuscript Room of the British Museum, promises of all kinds about lands and government, made through many years of history. The earliest belong to Saxon times, and you can find on them many names that you already know, such as Edgar, who rowed on the Dee; Canute, the Danish king, whose flattering courtiers asked him to command the waves of the sea to stop; Edward the Confessor, who built Westminster Abbey.

HENRY THE FIRST, WHO HELPED THE POOR TO GET JUSTICE

Then you can pass on to those of William I. and his two sons, granting land to various nobles and Churchmen, all with Norman names. Next comes a grant by Matilda, the daughter of Henry I., of land to the lovely abbey at Reading, where to this day the ruins, kept in fine order, can be visited by the thousands of people who live near and work in the great biscuit factories and in the seed nurseries of blazing colors that we can see as we travel past on the Great Western Railway.

Henry had pleased the English very much by marrying a princess who was the daughter of Queen Margaret of Scotland, belonging to the old Royal Family of Alfred and Edgar. They felt now that they had some share in their country, and took heart once more, and hoped for better days. Queen Maud was a good woman, like her mother, and she helped her husband in many ways. He put down the great and oppressive power of the nobles, and destroyed many of their castles. He also helped the poor to get justice. Henry lost his only son, William, when he was eighteen. He was drowned, with a number of his young companions, while crossing the Channel.

THE CONQUEROR'S CORONATION & DEATH

When William the Conqueror reached London, after defeating Harold at Hastings, he was crowned King of England in Westminster Abbey. A great riot immediately followed, owing to the Norman troops outside, when they heard the shouts of the people in the Abbey, thinking that the new king was being attacked.

William had been twenty years in England when he had to visit Normandy, which had been invaded by French barons. As he was riding down a steep street at Mantes, his horse threw him. He was carried to Rouen seriously injured, and died in a monastery. At his death his servants robbed him and fled, and he was alone.

The fine new White Ship, in which Henry had been persuaded to let his son travel, struck upon a rock, and only one of all the passengers managed to hold on to the wreck till morning.

Henry never recovered from the great shock, and though the nobles promised to take his daughter, Matilda, for their queen at his death, it was his nephew Stephen who succeeded him.

THE WAILING OF THE PEOPLE WHEN THE LAND BARE NO CORN

In Henry's reign the Anglo-Saxon or English Chronicle begun by Alfred, and continued year by year in different hands, came to an end. Matilda and Stephen disputed long for the crown. An old chronicle of the time gives an account of Matilda escaping from Oxford with her companions, over the Christmas snows, all dressed in white, so as not to be seen. Fighting went on, and the barons began building castles again, and taking people's property from them and doing as they liked, till all the good that Henry had tried to do in the way of securing peace and quiet and justice was undone. "The land bare no corn," wails the historian. "You might as well try to till the sea as the land, for the wickedness that is done in it."

The King of Scotland was Matilda's uncle, so he was glad of an excuse to make war on Stephen; and there was a famous battle fought in Yorkshire, called the Battle of the Standard, on account of the banners of three great churches of Yorkshire being taken into the fight. The victory was not of much use to Stephen, for the King of Scotland kept Cumberland without owning Stephen as his overlord.

THE POPE OF ROME GAVE IRELAND TO THE ENGLISH KING

When Stephen died, Matilda's son became King Henry II. His wife, Eleanor, was a French princess. She was heiress of three splendid provinces in France, and Henry was in his own right Duke of Normandy and overlord of Brittany, so that his dominions reached from the north of England to the Pyrenees, the great mountains which separate France and Spain. Much as he had, he was always going to war and planning to get more; especially he wanted to be king over the whole of the British Isles. After restoring order in England by destroying castles and re-establishing the power of the courts of justice, he made the Scotch king give up Northumberland, Cumberland and Westmorland, all south of the Cheviot Hills. He tried to get Wales and Ireland, but without much success. The only Englishman who was ever Pope lived at this time, and he made Henry a present of Ireland, because it was said then that all islands belonged to the Pope, and that he had the right to do what he liked with them.

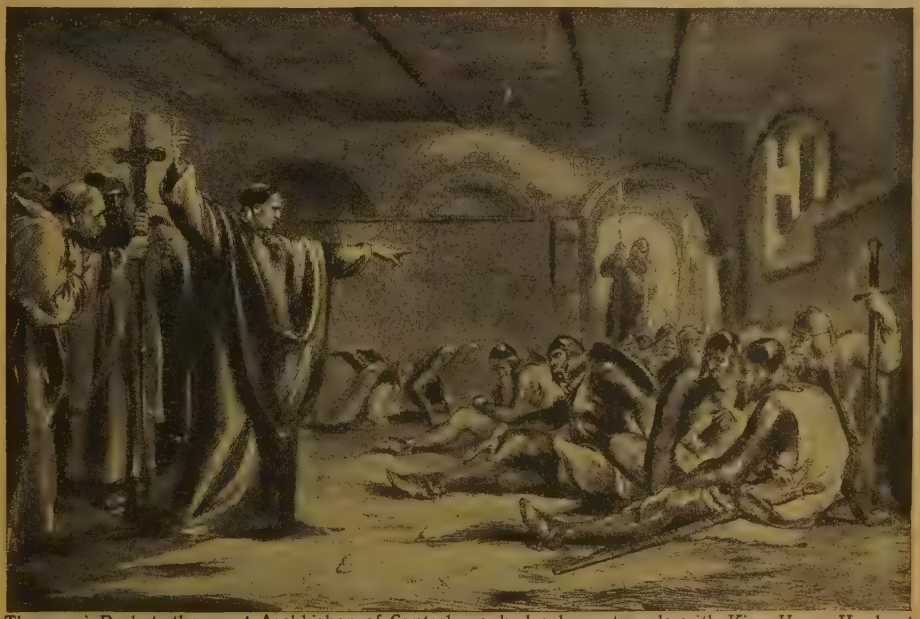
Naturally, the Irish did not agree to this. They preferred their own ways, with wild chiefs always struggling and fighting together; and though Henry succeeded in getting some sort of order in the part of Ireland that was nearest to England, things were as bad again, or worse, as soon as he was gone. A French king said of him, with amazement: "The King of England is now in Ireland, now in England, now in Normandy. He may be rather said to fly than to go by horse or boat!"

THE TERRIBLE THING THAT HAPPENED IN CANTERBURY CATHEDRAL

If you go to Canterbury Cathedral you will see the spot where the great archbishop of Henry's time met his death. His name was Thomas à Becket. He had disagreed with the king about some Church affairs, chiefly about how the clergy were to be punished when they did wrong. Henry, in a passion one day, said he wished someone would rid him of the troublesome archbishop. So four men hastened over from Normandy, where King Henry then was, and, taking the king at his word, killed Thomas in his cathedral. The steps that lead to the spot where the archbishop was buried are worn by the knees of pilgrims who for long years went to pray at the tomb of the man who had suffered for defending the clergy against the king.

Henry was not forgiven till he had walked barefooted and bareheaded to the chapel and received a beating with rods from each of the monks in turn. Before he died he portioned out his great dominions to his sons; but they did not like his keeping the over-lordship in his own hands, and there were miserable family quarrels in consequence. When

THE ARCHBISHOP WHO DEFIED THE KING



Thomas à Becket, the great Archbishop of Canterbury, had a long struggle with King Henry II. about certain rights of the clergy. The king, who was in Normandy at the time, at last flew into a passion, and said he wished someone would rid him of the archbishop. Four knights at once hastened to Canterbury, and in this picture we see them arguing with Thomas à Becket in his palace behind the Cathedral.

As the archbishop would not yield to the demands of the knights they threatened to kill him. He fled into the Cathedral and took refuge before an altar, but the knights followed and murdered him. The steps that lead to the spot where the archbishop was buried are worn by the knees of pilgrims praying at his tomb.

the name of his favorite son, John, was found on the list of those fighting against him, the old man could bear no more. Turning his face to the wall, he said bitterly, "Let things now go as they will. I care no more for myself or for the world."

His son Richard I. then became king. Look at the statue of him set up in front of the House of Lords at Westminster. It is a fine figure on the great strong horse, clothed in armor made of little rings of metal, and holding aloft the long spear he used against enemies far away from England. During the ten years of his reign he was nearly always away, and his wife was the only Queen of England who never entered the country.

The great barons took advantage of Richard's absence to break out again, and the people suffered much from bad trade and bad cultivation of the fields, and from having nearly all the money they had squeezed out of them. Perhaps you are wondering who had the money, and what for?

RICHARD THE CRUSADER, AND HOW HE GOT MONEY FOR HIS WARS

Of all things, Richard loved fighting and adventure best, and in his time the most exciting adventures were to be had in the Holy Land, at the eastern end of the Mediterranean Sea. The country, and its capital, the scene of our Lord's life on earth, had fallen into the hands of men who did not believe in Him, and who treated very badly the Christians who went to pray at the spots that were so sacred to them. So the Christians of Europe—French, English, and others—determined to get up expeditions and do their best to get the Holy Land away from those men. Richard I. joined the third of these expeditions, and he needed a great deal of money to pay for the journey.

He even sold a treaty which had been gained by his father from the Scotch king, William the Lion, in which he had acknowledged Henry as his overlord for the whole of Scotland. But Richard did not care; when once the fever and excitement of the Crusades—as these "holy" wars were called—were upon men, they seized what money and arms they could lay hands on, sewed strips of cloth like a cross on their arm, and hurried off by sea and by land to gain renown in fighting the enemies of Christ. We read the story of these Crusades in the BOOK OF MEN AND WOMEN, beginning on page 59 of our book.

So money was squeezed out of everybody—barons, people, and even the clergy—to pay for Richard's "holy" wars, and to get him out of prison when he fell into the hands of enemies.

RICHARD FORGIVES HIS ENEMY ON HIS DEATH-BED, AND JOHN BECOMES KING

Round the base of Richard's statue, opposite the House of Lords, are shown the scenes of his death at the siege of a castle in France. On one side is the terrible fight going on; on the other the king lies on his bed, pardoning the man whose arrow caused the wound from which he is dying.

Richard's brother, John, was the next King of England. It is difficult to say anything good about him. He seems to have been cruel to everybody, and to have had no friends. When the barons would no longer serve him, he wrung money out of his other subjects, and hired foreign soldiers to fight for him in Scotland, Wales, and Ireland. He had not been very long king when he lost not only Normandy, so that the English kings were no longer Dukes of Normandy, but the other parts of France that had belonged to his mother.

One of the most violent quarrels John had was with the Pope, who exercised as the Popes did then the right of ruling the churches of all the Christian countries, such as France, Spain, Germany, England, and they were very angry if any appointments were made without their leave.

WHEN THE CHURCHES WERE CLOSED AND NO BELLS WERE RUNG IN ENGLAND

So when John refused to accept an Archbishop of Canterbury chosen by the Pope, the Pope sent an order that, till the king gave way, all churches were to be closed; no bells were to be rung calling the people to service; no one was to be baptized, married, or even buried by the clergy. This made everyone very wretched, especially the poor, for they were used to getting help and comfort from the monasteries and clergy. This order from the Pope was called an *interdict*, or forbidding. It seemed as

if a blight were on the land while it lasted, and John only got more and more angry and violent. The Pope made a present of John's throne and kingdom to the King of France; then suddenly John changed his mind, received the archbishop, and restored what he had taken from the Church.

THE GREAT SHAME THAT JOHN BROUGHT UPON THE NATION

And now, see what a humiliation John inflicted on the proud, independent spirit of the nation. To show his submission to the Pope, he took off his crown and handed it to the Pope's messenger, receiving it back again as a gift from the Pope. John's letters about this time are dated from Dover, which reminds us of the story of his riding from place to place, from Windsor to the ports between Sandwich and Rye, and then crossing to the Isle of Wight, anxiously looking for the help from abroad which never came.

In the British Museum hangs a copy of the Great Charter, often called by its Latin name, Magna Carta. Look at it well. It was forced from John, with great courage and difficulty, by the barons. In it he had promised certain rights to the people, so that they might live in safety under good government. This Great Charter, which is often called the foundation-stone on which liberty was built, was drawn up from the charter which Henry II. gave to the people when he became king, which, again, was established upon the laws of Edward the Confessor and Alfred.

THE GREAT CHARTER THAT JOHN SIGNED IN A TEMPER

You would like to hear what sort of promises are made in that cramped Latin writing. Among them are these:

1. The king was not to make the people pay taxes without the consent of the Great Council.

2. No one was to be punished for any wrong-doing without a proper trial according to the law of the land.

There is a little island on the Thames, near Windsor, called Magna Carta Island, and on it John met the barons to put his seal on a lump of wax to show that he "signed" and consented to keep the promises set out in the Charter. He was in a furious state of anger all the time. It is said that as soon as the deed was done "he threw himself on the ground, gnashing his teeth, and gnawing sticks and straws in his rage."

The Pope supported John and freed him from his promise, and crowds of foreign soldiers came to help John to burn and rob and kill all over the country. It was a troublous time. Louis of France evidently felt he was going to take John's place—you can see amongst the charters a grant from him, giving away the town of Grimsby. Then the end came suddenly.

John had to cross the Wash, that broad inlet between Lincolnshire and Norfolk. When the tide is out there are miles of sands, and the long train of carts and wagons which were carrying the king's treasures were lost in soft quicksands as the tide came flowing in. Quite lately a handsome cup was washed up near the shore of the Wash, and it is believed to be part of this lost treasure of King John.

The grief and worry of it all caused John's death. The whole account of it can be read in the open page of "The History of Matthew Paris," beside the chronicle which describes the extraordinary efforts made to ransom his brother Richard from captivity.

HENRY THE THIRD, THE KING WHO BUILT WESTMINSTER ABBEY

John's little son Henry, only nine years old, was soon crowned at the Abbey—the old Norman Abbey of the Confessor. In one of the illuminated manuscripts in the Museum, gleaming with illustrations in bright colors and thickly-laid-on gold paint, there is a picture of Henry III. holding a model of the Abbey in his hand. The reason for his being so shown is that one of the great works of this king's long reign of more than fifty years was the beginning of the rebuilding of this church. He pulled down the old Norman east end, and built it up again in the new style that had come in, with arches pointed instead of round, and with much higher walls, columns, and roofs.

We can still go and look at this beautiful work of more than six centuries ago. Only part of the splendid tomb Henry set up in it for the body of Edward the Confessor now remains. The golden shrine, and golden statues, and precious stones are all gone. You may think it

looks dusty and dingy now, as you look close into it to see the mosaic or inlaid pattern of tiny pieces of glass; but remember that it has stood there for hundreds of years, and that round it have passed not only generations after generations of quiet folk come to pray in the holy place, or to admire its beauties and read the story of the past, but also rough soldiers and thieves, who tore down the ornaments and jewels, and made sad havoc with what had been the pride and joy of their forefathers.

SIMON DE MONTFORT, THE PEOPLE'S LEADER AGAINST THE KING

It has been said that the great result of Henry's long reign was the giving back of England to the English. It was possible for a poet who lived towards the end of this reign to sing:

Now England breathes in the hope of liberty,
The English were despised, but now they have
lifted up their head.

You will remember that William the Conqueror claimed all the land as his own, and parceled it out as he pleased; and, also, that when he wanted money he forced the people to pay as much as he chose. Now, two centuries later, when Henry III. wanted money for his wars, his buildings, and his foreign favorites, the people were strong enough to refuse to give it to him unless he promised to keep to the Great Charter and rule by the law of the land. In the great fight between Henry and the people about this, the name of a great patriot stands out — Simon de Montfort.

"I fear thunder and lightning not a little, Sir Simon," said Henry to him one day when caught in a bad storm, "but I fear you more than all the thunder and lightning in the world."

HOW THE BISHOPS FLUNG DOWN THEIR CANDLES AT THE KING'S FEET

Before the actual fighting began, Henry made promises over and over again, only to be broken. Let us see and hear how these promises were made on one occasion. A great procession of bishops and clergy, with splendid silk robes, carrying lighted candles in their hands, arrived at the Great Hall at Westminster, where Henry awaited them. Then, standing round him, they spoke strong and terrible words as to what would happen to the king who took away any of the freedom of the land. As their voices died away — can you almost feel the hush after the loud, passionate talking? — they flung down the lighted candles, saying:

"May all those who take away our rights perish, as these lights perish!"

The king made solemn promises as the candles were relit, and the bells rang out joyfully to tell the news to the people outside.

But the promises were broken, and the country had to fight again, and Henry was forced to draw up new laws and add to the good old ones. The new laws were written in English for the first time since the Norman conquest. Again the king broke his word, and more fighting went on, till at last Simon succeeded in forming a "talking place," called a Parliament, after the French word *parler*, meaning to talk.

This was even more useful than the old Assembly of the Wise Men had been. In it not only barons and bishops could discuss what was best for the country and the people, but knights from every shire had the right to come and talk; also citizens from the towns, and these, too, had a voice to say what the people in their part of the country wanted done, and how they wished the money to be spent which they paid in taxes.

THE CHILDREN'S ENCYCLOPÆDIA OF HUNDREDS OF YEARS AGO

The battle of Lewes was the crowning victory of the barons under Simon. When Henry was taken prisoner at its close, did he think, one wonders, of the words he had said long before about fearing his conqueror?

Three years after this battle a great thinker, named Roger Bacon, wrote a book about every sort of knowledge, which has been called the encyclopædia of the thirteenth century. He speaks of geography, grammar, music, languages, arithmetic, and many other matters. The story of how hard he worked, how he collected his materials, how poor he was, how kind he was in teaching others as poor as himself, is of great interest.

Henry's son Edward helped him at the battle of Lewes; later he went to join in a crusade, for these wars were still lingering on.

THE NEXT PART OF THE HISTORY OF ENGLAND BEGINS ON PAGE 769.

HENRY III. PROMISING TO OBEY THE LAW

King Henry III. wanted money to carry on his wars, but before they would grant it the people made him promise to keep the Great Charter granted by John. A procession of bishops and clergy, carrying lighted candles, arrived at the Great Hall at Westminster, where the king awaited them. Standing round him, they spoke strongly of what would happen to a king who took away the freedom of the land, and, throwing down their candles, cried, "May all those who take away our rights perish, as these lights perish!"

THE FIRST TRAINS TO RUN IN ENGLAND

A man on horseback riding in front of the first railway train to run in England.

A race of railway engines at Rainhill, near Liverpool, in which George Stephenson's Rocket won, 1829.

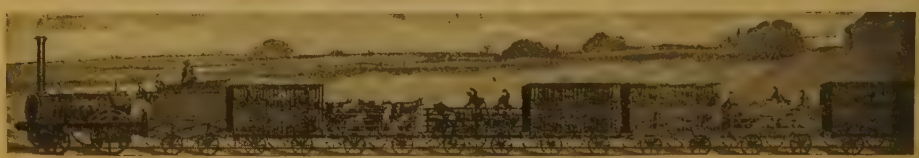
A scene on one of the first railways, which were quite open and not protected from the roads.

How first-class passengers traveled years ago: a train going from Liverpool to Manchester.

How second-class passengers traveled years ago: a train on the second railway built in England.

How third-class passengers traveled years ago, before all carriages were covered in.

How goods were carried years ago: a freight train from Liverpool to Manchester.



How cattle were carried in the early days of the railways.

SOME OLD PICTURES OF THE EARLIEST RAILWAYS BUILT IN ENGLAND

THE COTTAGE IN WHICH GEORGE STEPHENSON WAS BORN

MEN WHO MADE THE RAILWAYS

CONTINUED FROM 542

SUPPOSE when you want to go to the seaside or to visit your friends in the country that there should be no railway to the place. "Such a thing could not be," you think, "there are railways everywhere about the country." You cannot think of a place where there are not railways somewhere near, can you? Well, whenever you hear to-day of anybody being ninety or a hundred years old, you may think to yourself, "That is somebody who was born when there were no railways anywhere in the world."

The first real railway was opened on September 27th, 1825. Until then people traveled as they had traveled for thousands of years. They had to ride on horseback, or in coaches, or else they had to walk. It used to take as long to get from New York to Washington as it now takes us to get from New York to Denver. People on setting out used to say, "This is a very long journey which I have to make, and I may never return, so I had better make my will before I go."

They thought they were almost flying if the coach went along at the rate of ten miles an hour. Once, when a great judge was going from Edinburgh to London, he thought that he would ride in the coach which, by having fast horses ready to meet it at different villages all along the way to London, would travel the whole journey at the rate of ten miles an hour.

"Oh, don't go by that coach!" said one of his friends.

"But I must," he said.

"Well, if you do, be sure not to go straight through; rest for a day or two at York," said the friend.

"Why should I do that?" asked the judge.

"Well," said the other man, "the rate at which it travels is so great that if you go all the way by that coach it will force the blood up into your head, and you will die. Either go by a coach which is not so terribly swift, or promise me that you will rest at York."

What would he have said if they had told him that the time would come when men and women and children, riding in express trains, would think nothing of traveling at the rate of sixty or seventy miles an hour? He would have thought the person telling him that had gone mad, would he not?

Who made the railways, which have brought about this great change in traveling? It was George Stephenson, one of the poorest boys you ever heard of.

He was born on June 9th, 1781, at a little village near Newcastle-on-Tyne. There were five other children

in the family, so, with George and the other five and his father and mother, there were eight of them altogether. Their father, Robert Stephenson, though he worked very hard as a miner, and afterwards as a fireman for an engine which dragged coal up out of the pit, earned so little money that he and his wife and all these children had to live in a tiny cottage, which had only one room. That one small room was their kitchen, scullery, parlor, bedroom—everything.

How George Stephenson began to think while working at a coal-pit

Children did not have to go to school in those days if their parents did not wish it; poor people's children hardly ever did go, and George Stephenson was like the rest of them. He used to run about the village as a child, instead of learning lessons; then, when he got a little bigger, he set out to earn money by looking after cows. Afterwards he took care of a horse which was kept at the colliery where Robert Stephenson worked.

But, though the boy did not go to school, he was clever. He used to make little clay models of the engine at the colliery, and he got to know so much about the engine that he was employed to look after one which pumped water out of a coal-pit. He loved this work. But he wanted to know more about the engine than he already knew. He could see for himself what there was to be seen, but he wanted to know *why* the fire in the furnace caused the water in the boiler to change into steam, and why the steam was able to drive the engine. He could not understand these things, for all that he wished to know was written in books which he could not read. To be able to read seemed to him the most wonderful thing in the world.

The men who had been thinking about steam before George Stephenson

He knew that if he could learn to read he would be able to learn the secrets of steam-engines such as had then been built. Stephenson himself did not invent the steam-engine, for there was one already in use at the colliery when he first went to work.

For a long time men had been trying to make use of steam. Men in France had tried, and men in England had tried. Each in his turn did a little better than the others, until at last Thomas Newcomen, a Dartmouth blacksmith, who was born in 1663, and died in 1729, made a steam-engine which pumped water out of the mines.

This was a wonderful engine, considering that it was one of the first; but of course, it was far from perfect. A model of Newcomen's engine was sent to be repaired, and a young man named James Watt was put to work on it. This was in 1765, when Watt was twenty-nine. He easily did what was wanted to make the model work, but he saw that the Newcomen engine wasted nearly all its steam. Watt, who was a very clever man, thought long over this, and in 1769 he invented an engine of his own, which was far better than Newcomen's—stronger, and not wasting so much steam.

Then Watt and a man named Matthew Boulton became partners at Birmingham, and made many engines on the plan of Watt's. These pumped water, but they were fixed; they could not move about. Watt knew all about the science of steam-engines, but poor George Stephenson did not.

The great giant that dashed through the lanes at night

William Murdock, the man who found out the way to make gas from coal, also knew the secret, and made a toy steam-engine which ran on wheels. Murdock had a friend named Richard Trevithick, who did better than this. Trevithick, who was born in Cornwall in 1771, and died in 1833, made a steam-engine in 1801 which would travel along the road.

One dark night he and a friend, when out for a ride on the engine, dashed up to a toll-gate. The toll-keeper came out to take the money for their toll, but when he saw the engine spouting steam and sparks, he was so frightened that he could not speak.

"How much have we to pay?" Trevithick asked him.

The poor man was in too much fear to answer, so Trevithick asked him a second time.

The toll-keeper flung open the gates. "N-nothing to pay—nothing to pay—please pass on as quickly as you can," he said.

He thought that Trevithick and his friend were two evil spirits, and that the steam-engine was the carriage which evil spirits used.

THE MEN WHO MADE THE FIRST ENGINES

THE BOY WHO THOUGHT OUT THE STEAM-ENGINE: JAMES WATT WATCHING A KETTLE STEAM

From the picture by Marcus Stone, R.A., published by Messrs. Hy. Graves & Co.

YOUNG GEORGE STEPHENSON AND HIS ASSISTANT WORKING A MODEL ENGINE

Trevithick's steam-carriage was the first that ever ran along a road. When that was made, George Stephenson was nearly nineteen years of age. He had just got a situation in which his wages were twelve shillings a week.

STEPHENSON LEARNED HIS A B C WHILE INVENTING THE RAILWAY ENGINE

"Now I am made for life," he said, the money seeming so much. But still he did not even know his letters. He could not bear this any longer. He made up his mind, big as he was, to go to a little school and learn to read and write, to do as a young man what every child in the land can now do.

He had to begin at the very beginning, to learn his A B C, and how to do the simplest sums. He did not mind that. Although he worked hard at his engine from early morning till evening, at night he gladly ran off to his school to do his lessons. He soon learned, because he made up his mind that nothing should stop him.

Having learned to read and write and do sums, he could now read and understand the wonderful books which told him what was known about the making and working of steam-engines. While other young men were wasting their time, George was working at his engine or at his books. If not doing that he would be mending boots. He mended boots so that he might have a little more money, for he had fallen in love with a pretty country girl, and she had promised to marry him as soon as they could save up enough money with which to furnish a little house.

They did save up and get married. They had a nice little two-roomed cottage of their own, and a baby boy was sent to make them still more happy.

THE GREAT SORROW THAT CAME INTO GEORGE STEPHENSON'S LIFE

But great sorrow came to poor George. His wife died. So he went to work in Scotland, walking all the way to Montrose. He stayed there for a year and saved $140. But he loved his baby too much to be longer away. The boy had been left at home, so Stephenson felt that he must go back. The man who was afterwards to give the world its railways came back from Scotland in the same way that he had gone there—he walked all the way on foot.

When he got home he found that an accident had made his poor father blind, so George had now to keep his mother and father, as well as himself and his little child. He had a hard time of it. The Army wanted him to go for a soldier, and he had to give up all his little savings and run into debt to be allowed to stay at home and work for his child and his parents. His troubles were so great that he shed tears, and thought that it was of no use trying to live in England, that he really must go to America, where so many other people were going. What a difference it would have made if he had gone. They would have had no railways in England for years and years.

Stephenson was not the man to sit weeping. He got better work, this time at Killingworth colliery, some little distance away from his old home. At this colliery they had a steam-engine working to pump away the water which leaked into the pit. The engine worked so poorly that it could not pump quickly enough. For more than a year it had been at work, yet the pit was still full of water. Stephenson asked to be allowed to try what he could do. They laughed at the idea of his succeeding where better men, as they were supposed to be, had failed. Still, his masters let him have his way.

THE FIRST RAILWAY ENGINE RAN AT THE BOTTOM OF A COAL-PIT

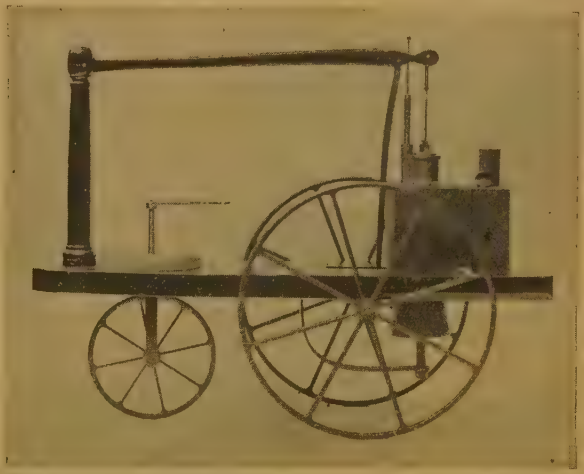
He took the engine to pieces, he altered one or two parts, and then set it going. In two days it had pumped all the pit dry. That was a great thing for George, and his employers saw, that he was a great deal more clever than the rest of their men; so they gave him charge of all the machinery at the colliery and paid him five hundred dollars a year. He still worked away at his studies, but there was new work for him to do at the colliery.

This work was to build a steam-engine to run on rails in the pit, and draw the coal from where it was dug out to the bottom of the shaft, where it had to come up to the surface. So the first railway on which a steam-engine ran began at the bottom of a coal-pit.

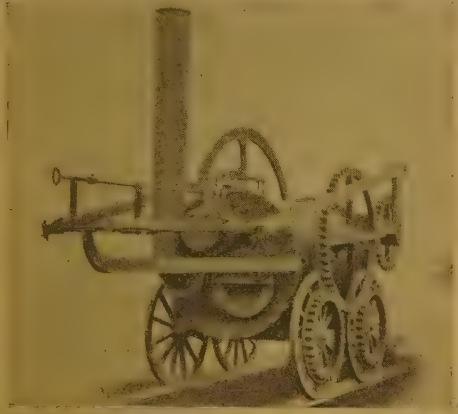
There had been rails there before, but the trucks of coal had been drawn over the rails by horses. So well did the engine work that instead of a hundred horses only fifteen were now required.

THE FIRST ENGINES & THE FIRST RAILWAY

In 1765 James Watt was asked to repair this model engine, and in doing so found out a way to make a better one.



This was the first locomotive engine ever made in England, and was constructed by William Murdock, the man who found out the way to make gas out of coal. It was only a little toy model.



The first steam-engine that ran along the road was made in 1800 by Richard Trevithick in Cornwall. It frightened people, who thought it an evil spirit.

The Rocket was one of the first engines that ran on a railway from one town to another. It was made by George Stephenson, and drew a load of 13 tons.

This is the first engine ever run in America. It was called the Tom Thumb, and was built by Peter Cooper. Small as it was, it could pull forty people eighteen miles an hour, and was run on the Baltimore and Ohio Railroad in 1830. The contrast between this and the great Mogul-Mallet engine, on page 314, shows the progress which has been made in eighty years.

This was the second railway ever made, and was constructed by George Stephenson. There were no station platforms, and the trains seem very small and slow to us now.

It was only a little engine, and not a very good one, so he built others, each one being better than the last. He found time to do other things, too. His little boy was now growing up, so George, who still needed more money than he earned at his work, used to clean and mend clocks at night, so that he could afford to send the child to a good school. Little Robert, who was very much like his father, was a wonderful student at school, and what he learned by day he used to teach his father at night. In time he became a great man, and helped his father in his work, and built engines and railways.

A SAFETY LAMP FOR THE MEN IN THE MINES, AND THE FIRST RAILWAY

Besides making engines and mending boots and clocks, and learning from books, George Stephenson also made a famous safety-lamp. At that time men had to work in the mines with candles to lighten the darkness. Dangerous gas often escapes into the pit, and when this happened in those days, the gas, meeting the flame of the candle, used to explode, killing many men and wrecking the mine. Stephenson tried and tried until he was able to make a lamp which would not explode. This was such a great thing that kind friends made him a present of a thousand pounds.

He was now becoming famous, and the owner of another colliery engaged him to build engines for him. George made five engines, each of which could draw a load of sixty-four tons along the rails.

When George Stephenson was forty years old, a gentleman named Edward Pease made up his mind to build a railway from Stockton to Darlington. He meant to have the trains drawn by horses, but Stephenson went to him and asked if he might build engines to draw them. Mr. Pease was surprised at the suggestion; but he went to see George's engines at work, and said that he would have one for his railway.

A MAN ON HORSEBACK RODE IN FRONT OF THE FIRST TRAIN

So George left the colliery for ever, and set to work to have the rails laid and to build his engine. He spent his £1000 to help in starting a business to build engines and railway trucks, and from this workshop came the first engine to draw a train.

The work was finished by Tuesday, September 27th, 1825, and thousands of people were at Stockton to see the train start. They thought that the thing would be a failure, and wanted to enjoy the fun. But there was no failure. The train, made up of six small cars carrying coal and flour, and one coach for passengers, moved off with George himself driving the engine.

A man on horseback rode in front of the train, waving a great flag. He thought that he would be able to lead it all the way, that the train would never go fast enough to pass him. But presently George made a signal to him to get out of the way, and set the train going at fifteen miles an hour, although the weight which the little engine drew was nearly ninety tons.

It was a happy moment for Stephenson when the train reached Darlington without accident. The coal was left, and the train started back, carrying only passengers. When Stockton was reached, it was found that about 600 people were riding in or hanging on to the trucks.

THE WISE MEN WHO THOUGHT THE TRAINS WOULD BLOW UP

That was the first time in the history of the world that a steam-engine had drawn a train carrying passengers over a railway, and the man to do it all was the poor boy of other days who had been glad to earn pennies by minding cows, and to learn his A B C while other young men of his age were wasting their time in drinking places.

Of course, after this, Stephenson became very famous, and he was at once called upon to build a railway between Liverpool and Manchester.

He was not afraid of the work, though he had many trials. First of all the consent of Parliament had to be gained before the railway could be built, and the silliest things were said against the work. Great men declared that the engines would burst and blow the trains and the passengers to pieces, or that, if they did not do this, they would set the countryside on fire; or that their smoke would poison all the cows and pigs and hens, and all the birds would drop dead as they flew over the railways.

The papers were as bad as the people. They all wrote against Stephenson and his works.

"You might as well expect people to let themselves be fired off on rockets

as trust themselves to steam-engines and railways." That is what one of the papers said at the time.

But people did trust themselves to railways. Stephenson, remembering this talk about rockets, called his first engine for the Manchester and Liverpool railway "The Rocket."

THE LITTLE ENGINE THAT STARTED THE WORLD'S RAILWAYS

For the opening of that railway, several engines were sent. The company promised £500 reward to the man who made the best engine for their work. When all was ready there was a public trial of the engines. The others were not nearly so good as George's splendid little Rocket. They broke down on the run, or could not go fast enough. He did all that was required to win the prize. It had been built at his own works, and his joy was very great because his son Robert had made the improvements which enabled it to gain the prize. The Rocket drew a load of thirteen tons at as high a speed as twenty-nine miles an hour.

It was only a little engine drawing a little train on quite a small railway, but it was the day of small things. Little beginnings have great endings. From that time George Stephenson became gradually richer and richer. His son worked with him. They made engines for all parts of England, for railways which they built.

THE POOR BOY'S ENGINES WERE ORDERED BY KINGS

Foreign kings sent for them to build railways in Europe, or to advize them how to do so for themselves. From George Stephenson's works engines went to all parts of Europe, and he made a fortune, and lived to see his son even more successful than he had been. They never forgot that they had been poor, but helped others who were as poor as they had been, and did great good all the rest of their lives.

Since that day many men have carried on the work of building railways. Isambard Kingdom Brunel, who built all the bridges and tunnels on the Great Western Railway, helped his father to make the famous Thames Tunnel. In boring their way they found that the earth and water would rush in, so the younger Brunel invented a wonderful shield. He watched a poor little worm at work in the water, and saw how it made its way into timber. As it ate its way into the wood it built round itself a tube, which became hard like lime, and so made a safe path for itself. And Brunel did something like that for his father's tunnel. He made a tube of steel, which was driven into the earth, and so kept it from tumbling in. Then between the tube and the earth above he forced in cement, which set as hard as rock. Had he not learned this secret from the worm, he could never have made the tunnel, and perhaps the tunnels under the Hudson River might not have been built.

ENGINES THAT RAN IN THE UNITED STATES IN EARLY DAYS

The United States was not far behind England in building railroads, and the need was greater because of the longer distances. Several engines were ordered from England as soon as Stephenson's "Rocket" was seen to be a success. Their names were The America, The Stourbridge Lion, the DeWitt Clinton, The John Bull and the like. The first American built locomotive was the "Tom Thumb," which was constructed by Peter Cooper for the Baltimore and Ohio Railroad, and began to run 1830. It was so tiny that it was little more than a toy, and makes us laugh to look at it, but still it could run eighteen miles an hour, while pulling forty people.

Soon the "Best Friend" was built for the South Carolina Railroad, but the real beginning of the manufacture of locomotives was in 1832 when Matthias Baldwin of Philadelphia built the Ironsides and the business which he began has grown until it is the largest in the world. The engines have also grown. The first ones made weighed four to six tons, while now many weigh fifty times as much and can pull a load of thousands of tons at a good rate of speed. Compare the Tom Thumb shown on another page with the monsters which run on the Western railways, of which pictures are shown in another volume. You will then realize the progress which has been made in this branch of manufacturing. These great engines have allowed much longer trains and have required much heavier rails and better roadbeds. Nowhere else are such heavy trains run as in the United States.

THE NEXT STORIES OF MEN AND WOMEN BEGIN ON PAGE 663.

THE HOMES OF MAN IN ALL AGES

Here we see the first buildings that men made. At first they were simply huts in trees, or holes in the earth. One picture shows an underground house; others show huts built on lakes, and little clay-brick huts with small doorways, which were the beginning of proper houses. At the bottom is the inside of a house in Rome, and the last picture shows an enormous stack of houses, one above the other, in New York.

HOW TO READ THE QUESTIONS

SO many questions come for the Wise Man to answer, and so many of them are related to one another, that the only way to answer them sometimes is to group them together. Many boys and girls who have asked questions about buildings, and water, and sand, and iron bars, will find their questions answered in these pages, where the Wise Man talks about buildings; and these pages should be read through from the beginning and not each question by itself. Where a question stands alone, it is answered by itself; but when many are related to one another the answers to them must be related too. So the best way to read the BOOK OF WONDER is to begin at the beginning each time and go to the end, instead of picking out questions here and there and reading them separately.

WHAT HOLDS A BUILDING UP?

CONTINUED FROM 519

OF course, said the Wise Man, we all know that mortar holds the bricks together; but we must remember that the wise builder uses the *weight* of his bricks to make his building strong; and since it is the earth, with its steady pull, that gives bricks, and all other things, their weight, we must not give the mortar all the credit. No bricks and mortar would ever make a strong building if there were not the earth's pull to bind them all together, or if the builder forgot it.

WHY DOES A STICK HOLD TOGETHER?

Mortar, as you know, "sets hard," like many other things—jelly and water included—if you give them a fair chance. And the power by which it, or paste or glue, holds things together is called *cohesion*—a word which simply means *sticking together*. We cannot see what really happens, but cohesion is one of the commonest things in the world. When you move one end of a stick, why does the other end move? Because of cohesion between all the parts of which the stick is made. All the parts of the stick hold together as if drawn to each other by a magnet.

WHY CAN'T WE MAKE A ROPE OF SAND?

Ah! said the Wise Man, that is the whole point. You can't make a stick or a rope of *sand*, and you can't build with bricks and sand. The sand has no cohesion except just the least little bit when it is wet. Have you ever thought why sealing-wax melts when it is heated? The truth is that cohesion is one of the most important things in the world, and that the world itself, indeed, could not exist as it is without cohesion. Everything that we call solid is solid because the tiny parts of which it is made stick or hold together. A piece of sealing-wax, for instance, if it is left alone, is held together by cohesion. It does not spill itself and run all over the table, and if you lift it up by one end the other end comes too. But if you apply heat to the sealing-wax it begins to run—it begins to lose its stickiness, or cohesion. This shows a second state in which anything may be, and this state we call liquid. Running water is liquid.

WHY DOES WATER RUN?

That is cohesion again; water runs because it has no cohesion, or else very little. While all solids have a great deal of cohesion—without which they could not be solids—liquids have very much less. But all liquids are by no means the same. Liquid water has very much less cohesion than liquid sealing-wax or liquid gum, which, indeed, has so much cohesion, or sticking together, that we appropriately call it "sticky." On the other hand, liquid alcohol or

liquid air—did you know that air could be liquid like water?—has very much less cohesion even than liquid water. But there is a third state in which anything may be, and that is the state of a gas—like air in its ordinary state, like the water which comes out of our noses when we breathe, and like the gas we burn for light. Now, *the* thing which marks a gas is that it has no cohesion at all—it runs wherever it can. However big the space that it is in, the gas always fills it. It goes under doors, out at chimneys, and out at windows, and so on. It has no cohesion.

How does a bar stay in its place?

All solid things have cohesion, and we can almost imagine the tiny parts of which they are made holding on to each other, as if they had little arms or hooks. That is why things can be solid; that is why they can have a shape and keep it. You see, the earth is so enormous, compared with anything that we can make or move, that, if there were nothing else to act against the power of the earth's gravitation, everything would crumble down quite flat, so that all the stuff in it might be pulled as near as possible to the centre of the earth.

A bar holds together, said the Wise Man, because, though gravitation is always acting, and is very powerful, cohesion is very powerful too. You know, for instance, the horizontal bar in the gymnasium? How does this stand? How does it come to stand so firm that it will support your weight? The answer is that, though the earth is pulling it down all the time, the earth's pull is balanced by the cohesion of the bar. If you tried to make the bar of something that has very little cohesion, like sand—well, you might try for a very long time before you succeeded! Of course, it is true that gravitation acts between everything and everything else. It acts, for instance, between the tiny parts of which the bar is made, or of which the bar of sand—if such there could be—is made.

Why doesn't the earth pull a bar down?

You are right to ask me that, said the Wise Man. Gravitation acts upon all things, and we must remember that, just as the earth pulls everything towards it, so *every part* of everything pulls every other part. But do not imagine that it is this attraction between the parts which explains cohesion, for this attraction is found in a gas, which has no cohesion, and in the wooden bar, which has this cohesion; yet the earth is so enormous, and therefore pulls so hard on all parts of the bar, that the tiny little pull of the parts of the bar towards each other would go for nothing if it were not for the great strength of cohesion.

Cohesion, however, is a wholly different thing, and entirely depends on the way in which the parts of anything catch hold of each other. Thus anything you can name may have cohesion at one time, like ice; may have less cohesion at another time, like water; and may yet at another time have absolutely no cohesion at all, like water-gas or water-vapor. Yet in all these three states—solid, liquid, and gaseous—the attraction due to gravitation is acting all the time.

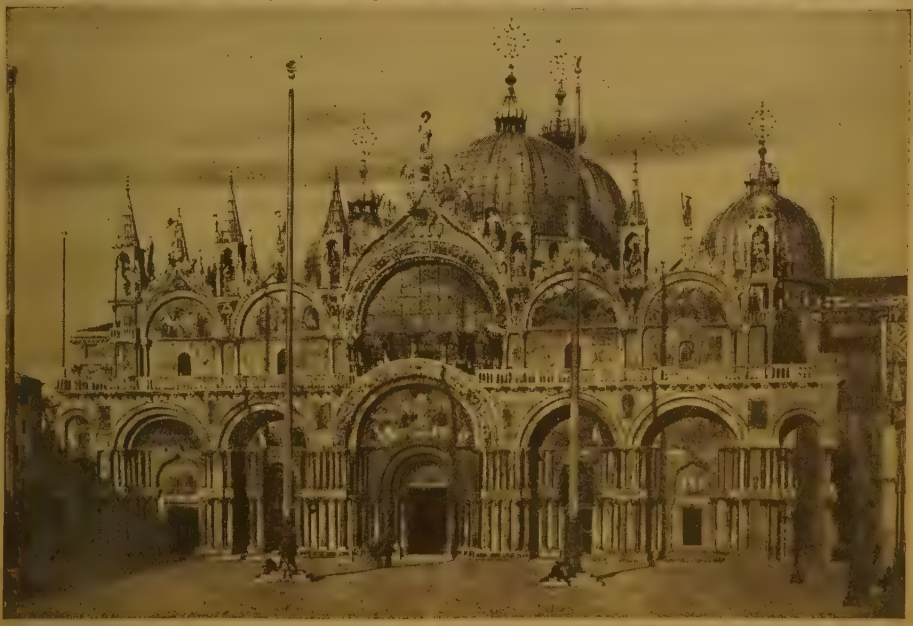
Is the earth's pull stronger than anything else?

Nearly everyone thinks that gravitation is one of the most powerful forces in the world. This is not true, and we only think it because we think of the gravitation of the earth, which is so enormous; but we forget that when we lift a poker by one end the other end follows, even though the whole earth is pulling it down, because the force of cohesion, or sticking together, in the poker is more powerful than the force of the earth's gravitation.

And now we can go back to buildings. The picture on page 609 shows us two of the most wonderful churches that have ever been built. They are in very different styles of building — St. Mark's at Venice belonging to a far older style than the great marble cathedral at Milan — yet they are both wonderful, and none of us can realize how extraordinary they must appear to people who have never seen buildings of such a kind. They are wonderfully high, for instance, compared with simple buildings, and they have wonderful galleries and arches and domes, some of which almost look as if they were resting upon nothing. But really we cannot understand how wonderful buildings like these are unless we

TWO OF THE MOST WONDERFUL BUILDINGS

One of the things no man can describe is the white marble cathedral at Milan, so wonderful a thing that it might have been built by fairies. It is said that there are a million points on this cathedral, and 2,000 statues. It is as if men had cut up a marble mountain into small pieces, fashioned each piece into a thing of loveliness, and brought them together to teach their silent lesson of beauty to all the world.



There are some buildings that make us wonder, some that make us feel. St. Mark's Cathedral at Venice, of which this is a picture, does both these things. It is so soft and beautiful, and yet so vast, that we feel we are dreaming when we look at it. Most of it was built up inch by inch, with small pieces of marble of many colors, making pictures that are part of the building itself. It has stood nearly 1,000 years.

remember what man's first buildings were like.

WHAT WERE THE FIRST BUILDINGS LIKE?

Well, said the Wise Man, I think that the first things men ever lived in began by not being buildings at all; they were just holes or caves in the earth. We have found some of these caves with bones and teeth and other things which tell us what these men had for dinner long ago. The first attempt that man made to build, I think, was simply to make the caves that he found rather bigger and more convenient; and so he scooped them out and made them deeper, and often he scooped away much of the roof so as to make the cave higher, and let him stand and walk upright in it. And when at last man began to build for himself, he made huts, such as many men live in even nowadays, like the Eskimos. And these huts are really very like caves if you come to think of it. Like caves, they have only one storey and only one room, and no chimney. Men were a long time in rising from the use of these early huts to such cathedrals as those of Milan and St. Mark's.

WHAT WAS THE FIRST GREAT BUILDING?

In time man learnt to use stone, and even to make artificial pieces of stone which we call bricks, and, of course, with these he could make fine buildings; and some of these, though they were built thousands of years ago, and are far older than the cathedrals in the picture, are not less beautiful.

Everyone agrees which is the finest building ever made before the time of Rome, and before civilization reached Italy. This is called the Parthenon, and, indeed, so far as beauty is concerned, it still is the finest building in the world, though far from being the most wonderful as a building. You may see in the Metropolitan Museum a model of this temple as it was in its full beauty. The Parthenon was built about 500 years before the birth of Christ, in the greatest age of Greece. It was built entirely of white marble, and the figures of horses and men that ran round it outside were made by Phidias, the greatest sculptor who ever lived. Many of these were moved away by Lord Elgin, and are now in the British Museum, where they are known as the Elgin Marbles.

WHO INVENTED ARCHES FOR BUILDINGS?

I am glad you ask me this, said the Wise Man, because it is one of the remarkable things about the great buildings of Greece that they do not have arches. Their buildings, indeed, were in principle the same as you can make with toy bricks. Now, it is a curious thing that somehow or other, though the Greeks learnt so much from the Egyptians as regards science and art and many other things, they did not know about the arch. Yet, even in very early Egyptian buildings, we find various kinds of arches, including even the pointed arch which you must have seen in many churches. Now, I wonder whether you have heard the word "keystone"? There are two kinds of arches—one is like this: and the other is very interesting, for it is built up from the two sides, and then at the very top of the arch there is put in, last, a stone called the keystone, because it keys, or, rather, locks, the two sides of the arch together. People who study buildings say that the kind of arch they call Gothic does not have a keystone, the two sides meeting in a straight up and down line.

A GREAT LINE OF ARCHES BUILT BY THE ROMANS, WHO WERE FOND OF ARCHES IN BUILDING

THE STEEL SKELETON OF A BUILDING

This is what is called the "skeleton" of a building. Several years ago there was introduced this new idea in building, namely, to make a framework of steel and cover it up with stone. Many great buildings have since been erected in this way. Sometimes in a building there is so little space between the windows that it looks as if the building must come crashing down; but the strength is in the steel, which we cannot see, and not in the outer covering, which we see. In fact, sometimes we see the stone sides in place on the upper floors, while below the great steel beams are still bare. Sometimes the ground floor seems chiefly windows.

WHO WERE THE BEST BUILDERS?

Now, you know that the Romans came after the Greeks, and that nearly everything they knew and could do they learnt from the Greeks. Indeed, I am afraid that there was a great deal which the Greeks knew and the Romans forgot. Now, the Romans did not build so beautifully as the Greeks. There never was any building in Rome so lovely as the Parthenon. But one thing the Romans had which the Greeks had not, and that was the arch. I do not think anyone knows whether some Roman found out all by himself how to make an arch, or whether they found arches in Egypt, or somewhere else: but, at any rate, somehow or other the Romans had the secret of the arch, and they seem to have been very proud of it, and used it whenever they could.

They were very fond of building what they called triumphal arches in honour of some great soldier or some great event, and you will see such arches in Rome and many parts of Italy. The Washington Arch in New York is the same sort of thing.

In our own times we have made a great discovery as regards buildings. You know that instead of building ships of wood we build them of iron and steel. Well, we do the same thing now in building; instead of stone we use steel.

WHY ARE HOUSES NOT MADE OF IRON?

Indeed, said the Wise Man, I think we are doing just what men did long ago when they passed from the "Stone Age," in which they used stone for knives and weapons, to the "Age of Metals," when they used bronze and copper and iron. I think that we may say we are passing from the Stone Age to the Age of Metals in buildings.

Of course, in the case of a bridge, we simply use steel and do not think it necessary to do any more. The most wonderful, though not the most beautiful, bridge in the world is the Forth Bridge, which is made of steel, and which in one part runs clear a third of a mile over water. Now, that is all very well, but when it comes to ordinary buildings, such as, let us say, an hotel, the builder is rather in a fix. He makes his building of steel; but we are not accustomed to buildings made simply of steel, and they would look very queer to our eyes; so after he has made the steel skeleton of his house, or of his hotel, or whatever it is, he covers it all up with stone, so as to make it look as if it were really the stone that was holding it up: yet really you might take all the stone away, and the thing would stand as before. Sometimes, too — and this is funnier still — the builder wants to have a lot of shops with big windows along the street below his hotel, and he leaves so little space between the windows that it looks as if the whole thing must come crashing down. There is so little stone showing that it looks as if the hotel were built on glass, though really, of course, it is a huge skeleton of steel.

WHAT IS THE SKELETON OF A HOUSE?

The skeleton of a house is the framework underneath the outer covering which we see. Really we are waiting for some very clever man with an original mind who will be able to make a modern steel building without having to face it with stone and pretend that it is made of stone. Of course, anyone could do this, only the building would look so ugly. We have not yet learnt how to treat the steel so as to make it look beautiful. I am sorry I cannot tell you how to do this, said the Wise Man. If I could, I should be the genius we are all waiting for. But he will come: and if we do not yet know how to make steel buildings that are both beautiful and useful, it was, after all, just the same when men began to use stones and bricks.

WHY IS IT DARK AT NIGHT?

If you take a ball and hold it near a bright light, said the Wise Man, the half of the ball next to the light is shone upon, and the half of the ball away from the light is dark. If you mark a spot on the ball, and then turn the ball round and round like a top, that spot will be shone upon half the time and will be in the dark the other half of the time. We live on a big ball called the earth, which is always spinning round and round, and it is shone upon all the time, day and night, by a bright light called the sun.

The place where we live is like the spot on the ball, and as the great earth-ball spins, part of the time we are on the side next to the sun and part of the time we are on the side away from the sun. When we are on that side it is

dark at night, but while it is our night it is daytime for the people who live on the other side of the ball. However dark it is where we live, the sun is always shining somewhere, and the earth is always traveling towards it or away from it. The sun does not come to the earth, but the earth comes into the sunlight. If you think of the ball and the light you will understand that, however dark it is, the earth will soon carry us round into the light again. Have you ever heard one of the most beautiful lines in all poetry: "There is a budding morrow in midnight," meaning that every night a day is being born?

How big is the world?

The Wise Man told the children the story of the earth, which is given in another part of our book. The world, he told them, is nearly round. From the North Pole to the South Pole, straight through the earth, the distance is about 7899 miles. A pole thrust through the centre of the earth, from side to side, would measure about 7925 miles. The distance right round the outside is about 24,850 miles.

The round world is a vast mass of land and water, surrounded by air. It spins like a top, it travels round the sun, and it moves forward with all the stars in the heavens—forward and forward, for ever and ever. So tremendous is the size of this huge globe, that the mighty range of mountains which we call the Alps are only like the burrowings of a mole on the ground.

Now, if the Alps are so small in comparison with the size of the earth, how much smaller must man appear? He is like a speck of sand.

If man is so small, how did he conquer the earth?

Man conquered the earth, on which he is like a speck, because he is not content to stand still like the Alps. Though he is so much smaller than these mountains, he has a brain which enables him to triumph over the weakness of his body and the smallness of his size. He can move; he can think; he can manufacture.

You can imagine how, in the far distant past, our savage ancestors would watch birds sailing through the blue air over the deep waters, and long with all their souls to have that power of flight. For one of man's chief qualities is *curiosity*. Man is always wanting to find out things. And naturally the first thing he most wanted to find out was the kind of earth on which he lived. So our early ancestors looked across the waters, and dreamed of lands on the other side of the globe.

The curiosity of men is the beginning of geography, for curiosity led men to look about them and observe the earth. When they had learned to build ships, they sailed across the seas, visited many foreign lands, and returned with descriptions of those places and the people they had lived among. These descriptions we call geography, and they are given in the Child's Book of the United States, beginning on page 8.

Why are the raindrops round?

I think that really you should have first asked, Why does the rain form drops at all? We know now that there is always something which we may call a speck of solid stuff in the inside of a raindrop, and when the drop was made it was made by the water-gas or water-vapour in the air turning liquid upon this solid speck, as steam from boiling water turns liquid on a cold plate held above it.

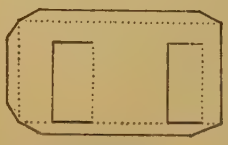
But you want to know not merely why the raindrop forms at all, but also why, when it is formed, it is so nearly round. The answer is the same as the answer to the question why water forms in round drops on a plate, and the question why it runs in drops down the window-pane when it rains. When water turns liquid it really consists of a kind of crowd of tiny parts, each of which is itself a part, or particle, as we say, of water, just as a human crowd is made of men and women.

Now, these little particles of water behave rather as a crowd might behave, if all the men and women making it were to catch hold of each other's hands, so that they were all joined together. If they all held on to each other as tightly as they could, and especially if all the people on the outside of the crowd held each other's hands so as to make a ring, then that crowd would be something like the crowd of particles of water that make up a drop of water. They all prefer to hold on to each other, and stick together and that is why the drop is formed at all.

THE NEXT QUESTIONS ARE ON PAGE 687.

PLANS FOR THE SHOPS OF MODELTOWN

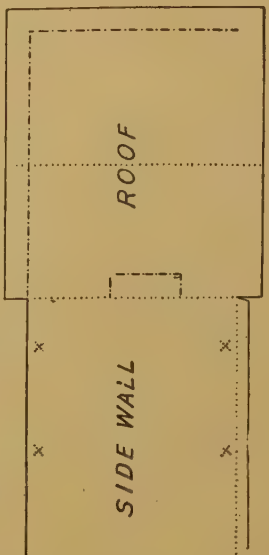
1. Corner shop for Modeltown

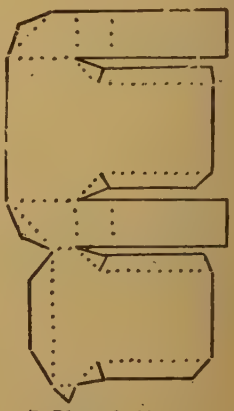


2. Plan of first-floor partition

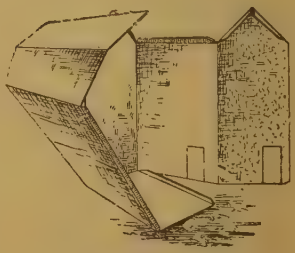
3. Plan of shop partition

These are half scale. Take measurements with rule B

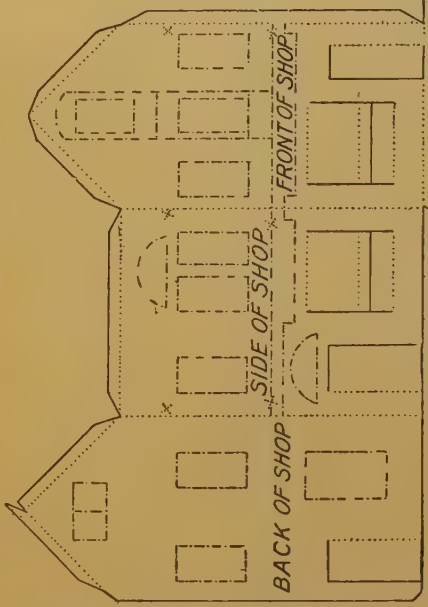




7. Plan of chimney
To be made same size



8. Folding up the shop

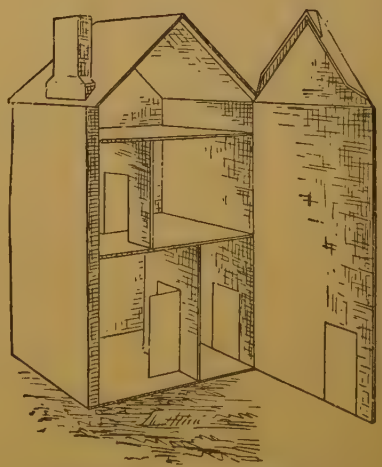


4. Plan for Modeltown shop—half-scale
Take measurements with rule B

5. Plan of first floor

6. Plan of second floor

Take measurements of 5 & 6 with rule B



9. The shop with the partition walls

WHAT THESE PAGES TEACH US

THE building of Modeltown advances a step further in these pages, where we learn how to make our first shop. We learn what to do in the garden at the end of April. In our needlework we learn to make the doll's first little garment, and we begin, also, another interesting occupation with our needle and thread and scraps of material that can easily be spared, perhaps, from mother's work-basket. This is the making of the cloth animals described on page 619. If we follow these instructions we shall soon have quite a little Zoo of our own. These animals are not only easy but very cheap to make, and they are not only a source of great amusement, but teach us one of the great lessons worth learning—how to make use of waste. Many more things we learn, also, that are both useful and entertaining, and while our games are, this time to be played out of doors, our problems give us more interest as we sit by the fire.

CONTINUED FROM PAGE 491

MAKING SHOPS FOR MODELTOWN

THE first sort of shop in a small town is always a grocer's shop. Have you ever thought why this is? Perhaps you have never thought about it at all. The reason is that people buy things to eat every day and sometimes several times a day. We do not buy a pair of boots or a hat very often, so that if we live away from the shops where such things are sold it does not matter much. But it would be very inconvenient if we had to go far for the sugar, tea, and flour that we need every day. That is the reason the grocer's shop is always the first shop to be opened in a village.

So that we will first make the grocer's shop. By this time we are familiar with the method of making the plans on the cardboard and of cutting out the shape and gluing the pieces together, and we need not, therefore, be told how to do every little thing as we were in the earlier lessons. We have now learned to think things out for ourselves, and to be able to see what to do from the plans and pictures without all the simple explanations.

The first picture (1) shows us what the grocer's shop will be like when it is finished. Notice that it is a corner shop, with two windows on the ground floor and with two doors. The two windows look into different streets, and that is why a corner shop is always thought to be better than a shop with two windows looking into the same street. A corner shop is always better seen than a shop with a front in only one street, and every shopkeeper, whether he is a grocer or not, wants his shop to be well seen. One of the doors in the grocer's shop front is the shop door. The other door leads to the house above, where the grocer lives.

A finished shop for Modeltown

Having an idea of what we are going to make, let us now begin to make it. The big plan, which is marked 4, must be very carefully drawn on card twice the size of the plan in the book. This is to say, we use rule B to take our measurements with, and the full-sized rule to mark the sizes on the card.

This will need patience and care, and must be done exactly. We must remember, of course, the meaning of the three different kinds of lines in the drawing, which were explained on page 482. But one thing more must be explained.

There are a number of half circles in the plan, which may seem difficult at first, but which we can easily make the proper size in our drawing by placing a dime on the card in the proper place and drawing round it with our pencil.

There are a few places in the plan where crosses like this × are marked. Make these crosses on the model and pierce the centre of the cross with a pin or a needle. These are the places where the inside floors are to be put, as we shall see presently.

Having made the large plan, cut out the card, as we now know how to do, bending it over at the dotted lines—*not at the chain lines, remember*—and fold it up to make the frame of the building. It is easy to see where the edges should be glued together so that we need not go over all these one by one. We must make the back of the shop to open, so as to enable us to put in the inside floors and walls afterwards. Picture 8 shows how the frame of the building is bent up in the

proper way, and will guide us if we have any difficulty in doing this. Now we glue to the inside walls, just above the holes we made in the centre of the crosses, some small slips of wood, such as matches without heads. When these are firmly in place, we make and cut out the cards to form the floors as shown in pictures 5 and 6, making them to double scale. Now we make and put in two partitions shown in pictures 2 and 3, making these also to double scale. The bottom picture (9) shows where the partitions should go, and on the ground floor and the first floor in the plan is a dotted line also showing where the partitions should be placed. We finally make and cut out the chimney, the plan of which is given in picture 7, making it the same size as in the picture, and glue it into its place.

The whole building should now look like picture 9, with the floors and partitions in their places and with the back wall opening. If we have cut the doors properly we shall find that they can be opened and closed, the side at the dotted line forming the hinge. The two shop windows are cut in a peculiar way. Fold the under parts back into the shop, and these will form the two window-sills. Now bend the top parts outwards, and they will represent sunshades, protecting the things in the window from the heat of the sun.

The building is complete, and now we have only to color it to take away its cardboard appearance. On the page before this there is a picture of a little shop made from the particulars given and afterwards photographed. The blinds were painted with red lines, the roof was painted with dark brown lines filled in with lighter brown to resemble tiles, and the windows were colored dark blue. Around the door, pillars were drawn and also colored brown, and the semicircular space above the door was made to look like a window.

Now we have made our first shop. From the same plans we may make a few more, and erect a little row of them. We must make the others without the side windows, as they will have one front only, and cannot face into two streets. This will not be difficult if we are the least bit clever.

The next thing to do, however, will not be so easy. Suppose we make a corner shop for the other end of the little street, just like the corner shop we have already made, but make it the opposite way—that is to say, with the side windows and the door at the right side instead of at the left side. This is a task that will show if we can think things out for ourselves as well as follow plans and instructions given.

We can make as many shops, of course, as we want in our little town; perhaps we might make seven altogether—one for the grocer, and one each for the butcher, the baker, the shoemaker, the dry goods merchant, and the druggist. That will be enough for a small town. But when all the smaller shops are doing a good business, very often a large store comes along and opens a much bigger shop, selling nearly all the things that all the other shops sell.

Our next task will be the erection of a larger shop than that we have just made.

A LITTLE GARDEN MONTH BY MONTH

WHAT TO DO AT THE END OF APRIL

WHERE a boy or girl has a garden that has been made and planted for some long time, there will be, besides the small plants of annuals that have come up from recent seed-sowing, some plants that live year after year. Some of these remain green all through winter, but some of them die down completely, so that nothing is seen above ground. But with the first breath of spring, and often as early as **March**, we see them peeping through the soil.

Among these are such favorite plants as perennial larkspurs, perennial sunflowers, Michaelmas daisies, phloxes, and bleeding heart. Where they have grown undisturbed for several seasons, it is possible they will send up too many young shoots. If the phloxes, for instance, do this, and we would rather have a few remarkably fine heads of flower than a quantity of smaller ones, we must reduce the number of these growths to five or six at the most. But if we would like to have a supply of nice young plants for autumn planting we need not throw away the young shoots we remove. We may cut them to about 5 inches in length and plant them in the ground in some rather cool position, and these cuttings will strike root. They should be planted firmly, and a little more than half their length should be under the soil.

The periwinkle, a capital plant to grow under the shade of trees

This rearing of plants from cuttings is very interesting, and gives us much pleasant work, as all the summer we shall have to think of them, and see that they do not suffer for want of water. It is rather late to put in the cuttings of phloxes and other perennial plants, but it is not too late if they are planted in a position that does not get the sun.

The present is a good time to plant new things in our gardens, and this should be done in the garden that has only lately been made as well as those that are not new. If we have no pansies, by all means let us obtain some at once, for they are as good as anything we can have for the front edge. We may plant them by themselves or in turn with other dwarf things, and this,

perhaps, is to be recommended in a small plot, as it allows of more different kinds of plants being grown. We must remember, too, that pansies are charming as cut flowers if we want to fill small vases.

Among the tall plants we certainly ought to put in a few early-flowering Japanese chrysanthemums. In gardening we must always be looking ahead, and seeing to it that we provide plants due to flower many months ahead. The pansies will flower most of the summer, and these chrysanthemums will flower right away through the autumn until the sharp frosts come.

A newly-planted corner of hardy ferns.

There is a right way to plant and also a wrong way. The right way is to dig a hole large enough to take all the roots and allow them to be spread out on all sides, and, having arranged the roots, then to cover the plant to what is called the collar. We can generally see how far it has been in the soil previously by the appearance of the stem, and can be guided by this. Young gardeners often plant too deeply.

If you want to have ferns in your garden, this is the time of the year to plant them.

Weeds grow apace at this season, so that it is a busy time for the hoe. But where weeds are growing close up to young plants, or the tender shoots of old ones, the hoe may become a dangerous tool, and it is far better to put it aside and take to "hand-weeding." Now comes the question: What shall we do with the uprooted weeds? Listen to what Mr. Robinson says on this matter in his book on the English flower garden: "Let us not cart them away, with the best of the surface at the same time, but bury them where they are or place them over the roots of trees and shrubs." You see, decaying weeds help to enrich the soil.

The pansy, a useful plant for a small garden.

The thinning of little seedling annuals, or other plants, must be attended to, and if a first thinning does not leave them far enough apart, then a second must be made, and if later they are still too close they must be thinned again. For small dwarf plants, 6 inches from plant to plant is sufficient, but for larger ones 9 inches or a foot, or more, will not be too far. We must not consider them in their present stage, but we must picture them fine grown-up bushy plants, branching out on all sides and laden with flowers, and we must leave room now for all this ample growth. Perhaps you have a few pots of geraniums and fuchsias that you have been wintering indoors, and hope to plant out in your gardens for the summer. At present it is too early to do this, but the time has come when we must prepare them for an out-of-door life and harden them. They can be stood out of doors in their pots in some sunny place, but, if at night it seems inclined to be frosty, either they must be put under cover, or a bit of calico tied to four small posts spread like a tent above them, and removed next morning. Frost strikes straight down; and this is sufficient protection at this season unless accompanied by a keen wind. But it is always safer to take them indoors, or to put them in a shed, as keen winds sometimes rise unexpectedly during the night.

As flowers which grow on plants that have a bulb root fade and die, you will notice that the leaves either of snowdrops or daffodils, or whatever they may be, grow very fast; they become much longer, and they grow very untidy. You want to cut off these leaves, perhaps, because you think they are no use now the flowers have faded. But by no means must you touch these leaves. Their growth at this time is of the *greatest importance*. They are storing up nourishment, which is conveyed to the bulb that it may have strength to produce its flowers next year. Thus, you see, it will never do to cut off these leaves. We must just leave them, and before long they will die away completely. Some of these leaves are brittle; but the crocus leaves are rather tough, so that we may, if we like, tie them in a loose knot, and prevent them, in this way, from taking up so much room.

Lettuce seed may be sown. Indeed, three or four sowings at different times is recommended to keep up a good supply. The ground should have been very deeply dug before this seed is sown, and it should be put in very thinly. Many seedling plants we can transplant if we wish to do so, but it is important to remember never to transplant young lettuce plants, for plants that are never moved will not run away to seed nearly so fast as transplanted ones. In transplanting, handle the roots carefully, and when replanted, give plenty of water.

GAMES TO BE PLAYED OUT OF DOORS

OUR games this time are to be played out of doors, and they have this great advantage—that nobody need stand still, but that all the players can take part in them at the same time.

ROUND TAG

IN this game, which is sometimes called "Tierce," "stations" or "homes" should be marked out seven or eight paces apart, but in such a way as to form one large circle. At one of these stations three players stand, one in front of the other, while at all the rest only two stand, also one in front of the other. Thus, if there are fourteen players, there will be only six stations—one occupied by three players, five by two, the remaining player taking the part of "he."

To begin the game, "he" must stand at the opposite side of the circle to that at which the three are stationed. Then he runs toward them, his object being to touch the *outside* boy. This boy at once tries to escape, but is only safe from being touched when he succeeds in placing himself in *front* of any other couple in the circle. Directly this is done, of course it makes three at that station, and the player at the back must escape in turn or he will be touched, in which case he has to be "he," and the game starts again.

I SPY

THE players divide into two parties. One party goes away and hides, the other stays "at home" with closed eyes. Presently they call out: "Coming once, coming twice, coming thrice," and if no one answers "Not ready" they begin their search. When any searcher catches a glimpse of a hider, he or she calls out: "I spy——," giving the name of the person found and the place of hiding. At the cry the one discovered leaves his place, and does his best to touch the seeker before he can get "home." Only seekers who succeed in getting safely back may go out again to look. Keen eyes and swift feet are necessary for all searchers, or they will have little chance of spying a hider and reaching "home" before he bounds out of his den. If the hiders fail to catch half the number of those who seek them they must take their turn in "home." This is a livelier game than hide and seek, though it is something like it.

TOUCH OR TAG

ONE player is counted out from the rest as "he." The others then scatter about the field, while "he" does his best to touch them. The one touched takes his place.

Sometimes "touchwood" is allowed, and that means that any player who has his or her hand against wood, such as a tree, a fence, or a gate, cannot be touched until the hand is taken off again. It is a useful part of the game when we get out of breath for a minute.

In "crosstouch" any player who runs between "he" and the person he is chasing makes that person free, and the offending player must be chased instead. The oftener this is repeated the livelier the game will be.

FLAGS

A LONG straight line is chalked on the grass, and the party of players is divided into two equal numbers, or sides. Each side then goes into its own "country," the line stretching between them. Every player must lay down on the grass, a few yards inside his line, a handkerchief, a cap or a scarf. These are the "flags." At a given signal one side rushes across the line to try to capture the enemy's flags. Those who succeed must be allowed to return to their country, but any caught before securing a flag are prisoners. It is then the other side's turn to cross the line, and their prisoners (if any) must help to capture the lost flags and those belonging to the enemy. No player must take more than one flag at each attack, and the side that is first to lose its flags is defeated.

FILLING THE GAP

IN this game all the players but one form a circle by holding hands, and the larger the circle is the better the fun. The player left out walks round and round the outside of the circle, and presently touches someone on the back. Directly he has done this he starts to run round the circle, while the boy he has touched does the same, only he runs in the opposite direction, thus leaving a gap, of course, where he stood. The game is to see who can reach this gap first, and the one who does so fills it. The other walks around and touches someone else, and so the game goes on.

WARNING

A LINE is drawn across the grass, and a player takes his place behind it, where he is at "home" and safe. Presently, with both hands clasped in front of him, he calls out: "Warning! Warning!" and, still with clasped hands, jumps across the line and chases the other players. If he can touch one of them, the one touched runs back to "home" with him, and they start out again together, hand in hand. The game becomes more exciting as more players are touched, for each one adds to the chain that comes out from "home" to make prisoners. But on no account must those who form this chain unclasp their hands, or they can be caught and made to release their captive.

FOLLOW MY LEADER

"MY LEADER" must be daring, or there will not be much fun in following him. The players take places one behind the other, the more the merrier. Away goes the leader through the most difficult places he can think of, jumping over ditches, climbing steep banks, and running over rough ground. If any follower fails to do the task set by the leader he must retire to the back of the row, and when the fun is over it is sometimes found that the one who started last has worked his way to the second place, and thus comes next to the leader.

HOW TO MAKE OUR OWN ZOO

A LITTLE while ago most of the creatures in our Home Zoo were lying together all in a heap at the bottom of somebody's piece-bag. They did not look much like animals then, but that was before they were touched and brought into shape by the wonderful fairies Needle and Thread. Our kitten was just a bit of black plush left over from the trimming of a cloak; our fierce lion was a corner of fawn-colored, smooth-faced cloth from a tailor-made suit; our fat pig and dear little white bunny were

Animals to make at home

Some members of our Zoo

odds and ends of a warm swansdown calico shirt; and our curly dog was a scrap of imitation astrachan from somebody's winter jacket. But we just cut them out, and sewed them together, and fed them well on wadding, and here they are—all that you see in the picture, and many more. Making one's own Zoo is great fun. It is so nice to have the animals to play with. They will all stand up; and if their feet are glued to a small stand, with wheels—such as any boy can make—little children will be delighted to draw them about. If they are *very* nicely made they are quite pretty models, and will readily sell at a bazaar.

But, before we start to make them, there are a few things which we must remember always if we want really to succeed. If we number them it will help us to remember.

1. The best materials are tightly woven stuffs that are plain on one side and fluffy or shaggy on the other. Thin and loose cloths that easily fray are troublesome. Beaver cloth, all imitation furs—if they are not too thick—swansdown calico, plush, and velveteen, all make up splendidly.

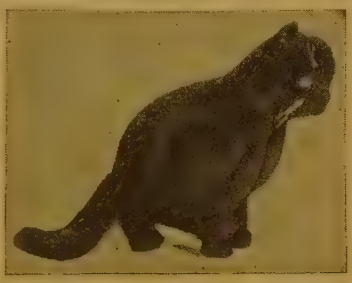
2. In cutting out, first note which way the pile, or "nap," goes, and take care to place the pattern so that it will stroke from the head to the tail, as in nature.

3. All the patterns are cut out in halves, so that you will have to double the material. We shall understand this better later. But be very careful to see that the two halves *face* each other, and cut out with neatness and exactness, making the pieces all fit one another precisely.

4. Stitch up as closely and neatly as you can, with the sewing-machine if possible, but remember that very firm, close seams are most important.

5. All animals have their principal seams sewn on the wrong side; but if the cloth is thick and firm, with a good nap, some parts—such as the holes where the legs are fastened in, and sometimes the legs themselves—may be sewn raw-edged on the right side, and the nap at the margin pulled over the stitches to hide them. Thinner cloth must be turned in where necessary to sew or hem over on the right side.

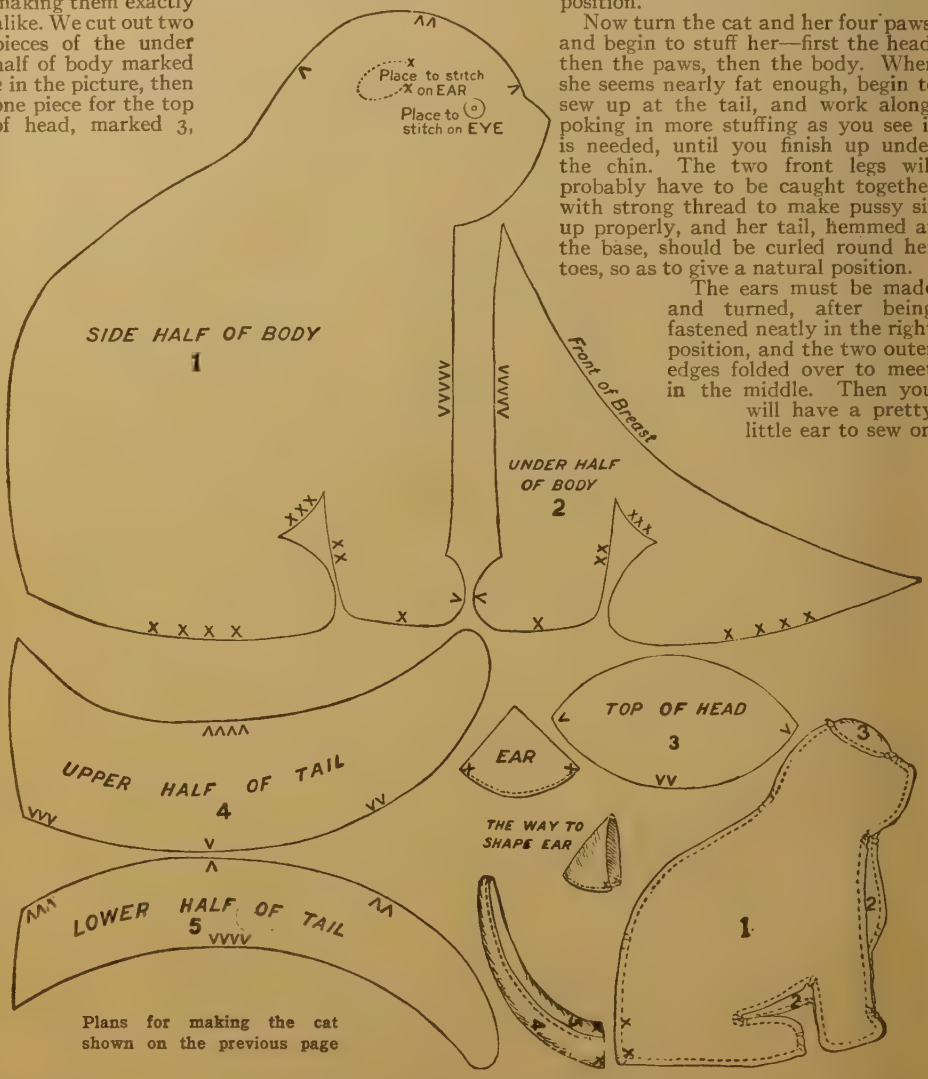
6. Stuff always with unbleached wadding, as filling. A yard will fill three or four animals of 7 in. or 8 in. long and 4 in. or 5 in. in height. Never use cut-up flannel or any other odds and ends if you want to get a good effect. Put the wadding in a little at a time, pushing it well home with your finger or the point of a pair of scissors, and pack as tightly as ever you can. This is important.



The cat made as described on this page

Now we may start on our first animal—the cat. Grey velveteen or plush makes the prettiest cat, but black will do. The cat, when cut out, is in eleven pieces—namely, two upper halves, two under halves, two pieces, upper and under, for each of the ears, the upper

and under halves of the tail, and a lemon-shaped piece on the top of the head. We cut out the pieces to the shapes shown in the plans, which we can trace on thin paper. Let us begin with the side half of body which is marked 1. We cut out two pieces this shape, making them exactly alike. We cut out two pieces of the under half of body marked 2 in the picture, then one piece for the top of head, marked 3, one tail piece marked 4, and another tail piece marked 5, and, finally, two ears to the shape given in the picture. We must remember to make every piece the size given in the pictures.



Plans for making the cat shown on the previous page

Now we are ready to sew the pieces together. The pictures are marked with V's and X's, and these show what pieces are to be sewn together. The piece marked VV is to be sewn to the other piece marked VV, and so on. We begin by stitching the under halves on to the upper ones, being careful to stitch very closely round the toes. Next stitch up the tail, turn it, and stuff it. Stitch on the lemon-shaped piece to the top of the head in the position shown in the pattern. Sew up the upper animal, beginning at the throat and going over head and back, and ending at the tail. Be careful to keep the halves in proper position.

Now turn the cat and her four paws, and begin to stuff her—first the head, then the paws, then the body. When she seems nearly fat enough, begin to sew up at the tail, and work along, poking in more stuffing as you see it is needed, until you finish up under the chin. The two front legs will probably have to be caught together with strong thread to make pussy sit up properly, and her tail, hemmed at the base, should be curled round her toes, so as to give a natural position.

The ears must be made and turned, after being fastened neatly in the right position, and the two outer edges folded over to meet in the middle. Then you will have a pretty little ear to sew on in position. Beads or sequins make bright eyes; but, if the cat is to be a toy for a young baby, black worsted eyes, just stitched, are safer. A nose and mouth may be also marked in worsted, as here shown, and bunches of white thread can be sewn on for eyebrows and whiskers. If you finish up by marking the "tabby" pattern in ink, copying from a real cat, and brush the stiffness out when dry you will find you have made a very charming cat.

The next animals we shall learn to make for our Zoo will be a lion and a tiger.

WHAT TO DO WITH A GIRL'S WORK-BA

2. THE DOLL'S FIRST LITTLE GARMENT

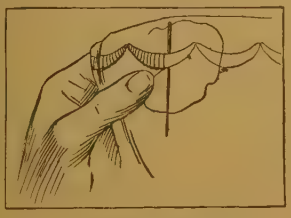
WE have learned how to do the different stitches that are needed to make dolls' clothes, so now we should be able to undertake the fine stitching for the garments that we are going to make.

We will start with the little chemise. If you look at the picture (1) you will see that the pattern is quite simple, and very easy to cut out if you read this article carefully.

Draw the pattern to fit the size of your doll on a piece of paper, and mark it A, B, C, D, E, F, like the sketch. Then take a piece of fine, soft calico, or better still, nainsook, twice the length and twice the width that you want the little chemise to be, allowing enough over for seams and hem. Now fold the material in half, and then fold it in half again. When you have done this the shape of the material should be *as it was before*, only smaller. You have now in your hand four folds of material, which are longer than they are broad.

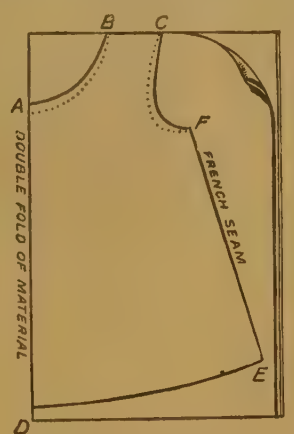
1. How to cut out the pattern

Before going any further we should be sure that the two single folds of material are at the top, and the double fold at the side, for this is important, as we shall see. If this is not quite clear to you, look at picture 2, which shows the material folded. Lay this down on the table in the position shown in the picture, and lay the pattern on it. Pin the pattern to the material before it can slip out of place, put one pin at the top, another at each side, and one at the bottom; then take a pair of scissors and cut all round the outlines of the pattern, except the parts between B and C (this is the shoulders), and between A and D (this is the middle of the chemise, as you will see when you open the material out after it has been cut).

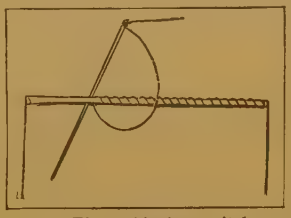

3. Buttonhole scallops

When you are cutting, you must remember to leave half an inch for the double seam under each arm, and an inch and a quarter for the hem at the bottom.

Take off the pattern and unfold the material. The two sides of the little garment are now shaped and held together by the uncut folds of the shoulder. If you look at your own little chemise you will find that the front of the neck is cut lower than the back, but in the doll's pattern both back and front are alike, are they not? Now turn to the picture (2) again, and you will see that there is a dotted line below the one between A and B. The line between A and B represents half the back of the neck, and the dotted line half the front. So to get the front, take your scissors and cut out the material a little, being careful to slope out more at the centre than at the sides. Then slope out each little sleeve (between C and F) in the same way. Just now we spoke of half the pattern. Nearly all patterns are cut out in halves — that means that nearly all garments have, of course, two sides, or two parts, which are exactly alike, and it is far easier to get these exact if we double the material, lay the pattern on it, and cut them both at once. This is why we always, or nearly always, speak of a pattern as being *half the back* or *half the front*, and so on.



2. Laying pattern on the material


4. The whipping stitch

Now these points are quite clear we must begin to sew our chemise together. Before starting the sewing we must be sure that our hands are spotlessly clean, for on its neatness and cleanliness depends the success of our work. To look well, needlework must be kept quite fresh, or its charm will be gone, however neat the work may be.

Thread a short needle and begin with the seams on each side, joining them either by running and felling them, or by a French seam. If we have forgotten how to do this, we must turn to page 489 of our book.

The next thing to do is the hem at the bottom. Turn up the material about 1¼ in. You will remember that we allowed an inch

and a quarter when we cut the material. The quarter of an inch is for the first little fold, and the inch will be the width of the hem. Measure an inch and a quarter all round, turn this down and tack it to keep it in place. A good way to measure the hem and to be certain that it is quite even is to get a piece of stiff paper—or a visiting card is better—measure an inch on it, snip it with the scissors to mark it, and use it as you would use a tape measure. When your hem is even, fold the rough edge under a quarter of an inch, and tack it again, and then hem it round with tiny, neat little stitches.

Now what are we going to do with the top and the sleeves? If we have been practising all the stitches which we learned the other day, we shall be able to do some small buttonhole scallops round the neck and sleeves, in which case we shall have the daintiest little ornament that one could wish for. If you look at picture 3 you will see how the material is cut out in large scallops all round for the buttonhole stitches to be worked on. The picture shows how the stitches should be narrow at the top of each scallop, and get wider in the middle.

5. The finished garment

If you cannot get this quite even, draw a faint line, like you will see in the picture, and work over it.

But if this is too difficult we can make a little hem and sew on the end of it a piece of pretty Valenciennes lace. As the neck is round, and not straight, it will not be very easy to fold the hem in the usual way; but if you try to roll the edges and make only a tiny hem, you will find it will not be nearly so difficult.

Now for the lace. This should be first gathered in a way that is called "whipping"—that is, we turn the edge in a little and make little over-and-over stitches like we can see in picture 4, and then pull it up, so that it makes a little frill. When the lace is pulled up full enough—do not let it be too full—sew it on to the edge of the hem with tiny stitches, just as you "whipped" the lace. In sewing the lace to the chemise, do not put the two back to back and then sew, but draw them together as you would sew together the two edges of a hole in a glove. This is the only way to get the lace to set quite flat.

And now your little chemise should look just like the one shown in picture 5.

ARRANGING FLOWERS FOR THE HOUSE

THE world has paid every woman a charming compliment. It has credited all of us with the ability to make our surroundings beautiful. Have you not read in many books that the heroine possessed a magic touch? When she had been there the room seemed to show an extra daintiness, the place wore an added charm, an air of comfort and cosiness that it did not possess before. But, unfortunately, the novel gave no precise direction as to how she did it.

These things are not arrived at by instinct. The good fairy who deals out the birth-gifts is not so lavish as we are led to suppose, and seldom gives to anyone so big a gift that there is nothing left to learn. She just gives a little bit—just enough to show it is there — and one has to learn the rest.

We shall not be able to learn here everything that our favorite heroines are supposed to know, but only a few things about one simple part of the subject—how to arrange flowers.

I wonder if you have ever thought that the size, shape and color of the vase is a most important point? For instance, daffodils, which are heavy flowers, should always stand in strong china—for preference, green glazed ware. There is something so strong and sturdy about their growth that they need a good support and plenty of water; so don't put them into frail china vases that will topple over with a breath of wind because they are top heavy.

This shows the right and wrong way to arrange violets and similar flowers. They should be loosely arranged in a low vase, and not cramped up in a high vase where they can hardly be seen.

Also remember how the daffodil grows. How many leaves go to one daffodil? Hundreds! Well, you cannot get hundreds into a vase, but you can get a good many, and you will find the flowers look far finer with a plentiful supply of leaves, because —and this point applies to every kind of blossom—they *grow like that.*

Suppose you had a lovely jarful of white lilies, but no leaves, you would not think of putting in some thistles, would you? And yet many people who try to arrange flowers do things that are just as absurd and wrong as this. Be careful how you mix blooms; be quite sure they go well together, or it is much better to put them in separate jars. It does not always happen that all

varieties of one kind of flower look well together. Two geraniums, one a vivid scarlet and the other a magenta pink, would give a terrible effect if they were put in one vase. After all, most flowers do look best by themselves—although one often has to make use of those one has.

It is a good rule to keep to one color and white, or only to use several shades of one color. In each case have plenty of green. Also remember that the green leaf of the plant itself always suits the blossom best, so that if you cannot get that, use some other leaf as much like it as possible in color and size.

Another important point to remember is the position of the flowers. Some flowers were made to look down upon, while others are more charming when one has to look up at them. So, when placing them, try to think which is the better position.

If you have an azalea plant in bloom don't put it on a high table, but stand it on something very low or on the floor, so that you can see down on to the lovely masses of flower, and not only get a view of the stalks and backs. Flowers like bluebells which droop their heads will look better up high, say, on the mantelpiece, because then one can see the beauty they seem to be shyly hiding.

Don't despise wild flowers. They can be made to look lovely in the house. Select the best blossoms and keep one kind together, and have them always in big bunches. Buttercups, with a few strands of green wild oats rising above them, look beautiful in a big low jar. But they should be stood in the sun, for half their charm lies in the glossy shine on their petals, and this is best seen when the sun is on them.

Some people gather a few buttercups, put them in a tall thin vase, and stand them in a dark corner, and then they wonder why they look so dreary. It is only because they went the wrong way to work, and did not think.

Marguerites carelessly arranged in a wide bowl.

This is the same bowl, with a jam-jar inside it, hidden by the flowers, which holds the stems together and gives a prettier effect.

Have you noticed how very beautiful some of the seed-pods are? Use some occasionally among your blossoms. Nasturtiums, sweet peas, and roses have the right sort for decoration. They give a variety and uncommonness to quite an ordinary bunch, and in the autumn they can often be made into a decoration by themselves. Think how charming a large bunch of red rose-berries can be, and honesty, you know, is a seed-pod too.

Now we come to the question of bowls. Big bowls of flowers have a charm which a mere vase can never possess. Think how often our artists put a bowl of flowers in a picture! Not everyone can manage to get the blooms to stand up properly; they have an annoying trick of falling to the edge and leaving a hole in the middle. This will not happen if you put a little jam-jar in the centre of the bowl first, and then fill both with water; but be sure your jar is not higher than the bowl, or it will show.

Remember that no woman who is really refined allows ugliness near her. These little things take such a short time to do, and really give a great deal of pleasure.

THE EASIEST WAY TO MULTIPLY BY NINETY-NINE

SOME of the numbers in the multiplication table are easy and some are difficult. Perhaps you think that the figure 9 should not have been in it at all. But there is a very easy way of multiplying by 9.

Suppose that you want to multiply by 9. Well, the easy way is to put 0 after it and then put the same figures below, without 0 added, and do it as a subtraction sum. This is how it is done:

34,875,695	
348,756,950	
34,875,695	
313,881,255	

When we add 0 to a number we really multiply the number by 10. The number 9 is, of course, one less than 10, so that when we multiply by 10 and then subtract the number itself once we are really multiplying by 9. This way saves more time if we are multiplying by 99, or 999, or any number of nines. Suppose we have to multiply 9,876,543 by 99, this is how we do it:

987,654,300	
9,876,543	
977,777,757	

We simply add 00, which is the same as multiplying by 100, and then take away the number once. In multiplying by three nines (999) in this way we add three noughts (000), and so on with any number of nines, always subtracting the original number once after adding the noughts.

LITTLE PROBLEMS FOR CLEVER PEOPLE

THESE problems are continued from page 491, and the answers to the problems on that page are given below.

HOW LONG WAS THE TRAIN?

30. As I was waiting at the station, a train took 9 seconds to pass me; and to go through the station, which is 88 yards long, it took 21 seconds. How long was the train?

HOW OLD IS TOMMY?

31. In another three years Tommy will be three times as old as he was three years ago. How old is he now?

HOW FAST IS THE CURRENT?

32. Duncan rowed three-quarters of a mile up-stream in half an hour. If there had been no current he would have taken only a quarter of an hour. What is the speed of the current?

WHAT WERE THE DISTANCES?

33. A farmer drove to Chester at 8 miles an hour, and returned home by a road 2 miles longer at 10 miles an hour. He found that the return journey took 12 minutes less than the outward journey. How long was each road?

WHAT WERE THE COINS?

34. A man asked his friend for change for a half-sovereign. The latter replied: "I have five pounds in silver, but I cannot do it." Explain how this could be.

HOW MANY MEN WERE LOST?

35. Nine men, lost in the mountains, had food for five days. Next day they met other lost men without food, and it was found that the food divided among the entire company would last for three days only. How many lost men were in the second party?

THE ANSWERS TO THE PROBLEMS ON PAGE 491

19. By 8.30 Alfred has walked one-fourth of the way, and in another 5 minutes he has walked one-third of the way. The difference between one-third and one-fourth is one-twelfth, so that he walks one-twelfth of the distance in 5 minutes. At 8.30 he still has three-fourths, or nine-twelfths, of the distance to go, and this will take him 9 times 5 minutes, or three-fourths of an hour. He therefore arrives at school at 9.15.

20. From noon on Monday to 8 o'clock on Wednesday morning is 44 hours. His father's watch, therefore, lost 3 minutes in 44 hours. But it was right when it had lost only 2 minutes, which it would do in two-thirds of 44 hours—that is, in 29 hours 20 minutes. This number of hours from noon on Monday would make it 5.20 on Tuesday afternoon.

21. Try one carryall first. This will seat 9, and leave 50. There is not an exact number of 4's in 50, so that they could not be seated in cabs. Next try 2 carryalls. These will seat 18, and leave 41, which, again, cannot be seated in cabs. Next, 3 carryalls will seat 27, and leave 32. Now, 8 cabs will seat exactly 32, so that the manager must have sent 3 carryalls and 8 cabs.

22. The hare makes 3 leaps while the hound makes 2, so that she makes 9 while the hound makes 6. But the hound goes as far in these 6 leaps as the hare does in 14, so that the hare loses a distance equal to 5 of her own leaps in every 6 leaps the hound takes. She will therefore lose 60 leaps while the hound takes 72—that is, the hound catches her when he has made 72 leaps.

23. The customer received 3 cocoa-nuts (worth 24c.), 15 oranges (worth 15c.), and 2 apples (worth 1c.), making 20 in all for 40 cents.

24. This is what is usually known as a "catch"; and the answer is that, as they stood, they faced each other, one looking north and the other south.

25. One-third of the seats were filled at 50c. each. At 25c. each two-thirds would have yielded the same amount. Therefore, had the hall been filled, the remaining third would have yielded $50, so that there were 200 in that third, or 600 seats in the hall altogether.

26. If the grocer had put in 1 oz. of chicory and 15 oz. of coffee, the price would have been 30½c., that is 30c. for the coffee and ½c. for the chicory. Thus every ounce of chicory in the pound of the mixture lowered the price 1½c. below 32c. 23c. is 9c. less than 32c. and there are 6 times 1½c. in 9c. Thus there were 6 oz. of chicory in the pound of the mixture, and there must have been 10 oz. of coffee.

27. If we divide 60 minutes by the number of trains an hour, we get the number of minutes between each train. If there were 3 more trains per hour, there would be 1 minute less between each train. We therefore have to find two numbers whose difference is 3, and which, when divided into 60, gives results which differ by 1. The numbers which divide 60 are 2, 3, 4, 5, 6, 10, 12, 15, 20, 30. First, those which differ by 3 are 2, 5; 3, 6; and 12, 15. Of these, the pair which gives results differing by 1 when divided into 60 is 12, 15. Hence there were 12 trains an hour, which is a train every 5 minutes. The passenger waited 4 minutes.

28. If there are more words than 12 in a telegram, the cost is ½d. a word, so that if one contained three times as many words as the other it would cost three times as much. It is clear, then, that the first telegram did not have more than 12 words. Therefore it cost 6d. The second must have cost 1s., and would contain 24 words. Thus the telegram of the day before had 8 words.

29. Fred and Albert crossed the ferry first, and Fred brought back the boat. Then the father crossed alone, and Albert returned with the boat. The boys again crossed together; and Fred brought back the boat in which the postman crossed alone. Albert then rowed across to the starting shore, and brought back his brother.

THE NEXT THINGS TO MAKE AND TO DO BEGIN ON PAGE 727.

WHAT THIS STORY TELLS US

WE read in these pages of the animals that are nearest in likness to ourselves. Once upon a time there were no monkeys, but lemurs. Just as different races of men have descended from one great family, so huge apes and many sorts of monkeys have descended from the lemurs. Some have become animals like squirrels; others have grown into great creatures so like human beings that they are called man-like apes. The apes have brains like those of a tiny child, but they are more below the savage in brain power than the savage is below you. The apes are made in body as we are made; they have great strength and courage; they make rough homes of branches and leaves, but there the likeness ends. The gorilla, the orang-utan, and the chimpanzee, with their power and ferocity, the gibbon, with its strong voice and wonderful leaping powers, are described in these pages, where we read also of the many kinds of monkeys.

THE ANIMALS MOST LIKE MEN

GORILLA ORANG MANDRILL COAITA LEMUR LORIS
CHIMPANZEE GIBBON BABOON HOWLER MARMOSET AYE AYE

CONTINUED FROM 514

WHAT animal in all the world would you most like to see? You can see lions and tigers and all manner of fierce beasts alive at the Zoo. But there is something you never have seen, something which it is almost certain you never will see. That is a full-grown, live gorilla. You will probably never see in America a full-sized gorilla or an old chimpanzee, or an old orang-utan. They are too big and strong and fierce to be caught.

We may call the great apes man's savage likeness, because they are more like men than any other animals. They have no tails. They have hands like our hands. They have the same number of teeth that we have, though theirs are much larger than ours. Their bones are like ours; their brains are like ours only smaller and not so well developed.

Yet, for all this likeness to ourselves, they are very terrible-looking. They look terrible because, while we cannot help seeing that in many ways they are like ourselves, they are dreadfully ugly. The orang-utan looks like a hideous old man. If the gorilla were not covered with thick hair he would look like an ugly negro, for his skin is quite black, like that of the negroes of Africa, in the forests of which the gorilla lives. The orang-utan is a reddish-brown.

These apes have brains not so good as those of the lowest savages, the wild men of Australia, and those savages who lived in Tasmania until the middle of last century. The savages can make tools and throw things. The apes use stones to crack nuts, and when they are chased by hunters they break off the branches of trees and throw them at their enemies.

The biggest of them all is the gorilla, which lives in the forests of West Africa. The biggest are as tall as a tall man. Like all the man-apes, the gorilla is what we call four-handed. Its proper hands are just like ours, but its feet are hands as well as feet. Its toes are like fingers, but the great toe, instead of being close up to the rest as ours is, stands off like our thumb and acts like a thumb. Thus it can not only walk on its foot; it can hold things with it as well, and clasp the branches of the trees along which it is climbing. Its arms are very long, so that its hands reach below the knees. This is, of course, longer than our arms, but then the gorilla's legs are shorter than ours.

These long arms are necessary for the gorilla's way of living. When it wishes to walk or run upon the earth, it cannot go far in an upright position without touching the ground with its hands. It trots along like a baby

toddling, but keeps touching the ground with its hands, doubling up the fingers and pressing upon its knuckles. But that is not the most important way in which its long arm serves it. No matter how quickly it may be traveling through the trees—for that is where it chiefly goes—it has to be very careful about finding branches strong enough to bear it. So while it holds on to one bough with its feet, it reaches out with its great long arms and tests other branches to see if they are strong.

AN ANIMAL LIKE A HIDEOUS OLD MAN, STANDING ON GUARD

It is a heavy creature, and if it fell it would hurt itself badly. The gorilla makes its resting-place about twenty feet from the ground, not at the top of the tree, because the higher it goes the more the wind catches it. Lower down, of course, it is sheltered and warmer.

All sorts of stories have been told about the gorilla carrying off people and making them work as slaves, but those stories are false. The gorilla, though it is one of the strongest beasts in the world, never attacks a man unless it is itself in danger. Then it is a terrible foe indeed. Its first thought is for the safety of the mother gorilla and the baby gorillas. While these escape from danger the big gorilla stands on guard, beating its chest till it sounds like a drum. Then, when its family has got away, if the enemy does not retire, the gorilla often rushes at him, and unless it be at once shot it will kill the man, no matter how strong he is, or, at any rate, leave him hurt for life.

Once a man fired at a gorilla which had come close up to him. He missed his aim, and the gorilla, seizing his gun with its hands, put the barrel between its great teeth and bit it till it bent like tin. Then it seized the man and bit his hand off.

THE GREAT STRENGTH OF THE GORILLA AND CHIMPANZEE

No wonder that we have never seen a big gorilla alive in captivity. With its powerful arms, its mighty teeth, and its savage nature, it is impossible to capture a big one alive. Little ones have been caught, but they have always died. They are better where they are, in the great gloomy forests. There they never do harm to man or beast if they are left alone. Once, by caring for it like a baby, they kept one alive in the New York Zoo for almost a year.

We have had young chimpanzees alive at the Zoo, but never long enough for them to grow into great, strong creatures such as live in the forests. Big ones have seldom been caught, for they, like the gorillas, are very fierce if attacked. They are not quite so terrible as the gorillas, because they are not so big. The largest, when fully grown, are only four feet high, but as they have huge teeth and very strong arms they are too powerful to be captured. Not being so fierce as the gorillas, they always run away if possible when attacked; it is only when they cannot get away that they fight. They live in the same part of Africa as the gorilla, but cover a wider area, and they are great thieves. They steal the natives' crops of fruit and vegetables, and it is this which causes the black man to kill them.

A CHIMPANZEE THAT BEHAVED LIKE A CHILD

When caught young they can be tamed, and then they make amusing and interesting companions. Dr. Livingstone, the great missionary and traveler, had one given to him as a pet. It became very fond of him, and used to beg to be taken for walks with him. It would hold out its hand to him if he were going out, and if he did not take it it would cry like a child. When he was not going out, it would get leaves and sticks and grass and make itself a nest and cover itself over, just as it had been used to do when wild. If a native or a dog came near it would run to Dr. Livingstone, put its back against his legs, and then make ready to fight, just like a boy.

Have you ever known a jealous child? A chimpanzee, when it gets fond of a man, becomes jealous of anybody else for whom he has a liking, and it will do far worse things than any jealous child will think of doing. Once Sir Harry Johnston was coming home to England from Africa with a chimpanzee on the ship. Everybody was very fond of it, and made such a pet of it that it used to sit at table and have its meals with the rest of the passengers.

All went well until the ship stopped at a port where a lady and gentleman came on board, bringing their baby with

THE APES LIKE MEN AND THE AFRICAN BABOONS

The biggest man-like ape is the gorilla, which lives in the forests of West Africa. This picture shows a baby gorilla. The largest stand about six feet high.

The chimpanzee is not so terrible as the gorilla, because it is smaller. Several young chimpanzees live in the Zoo, and this picture shows one of them.

The orang-utan lives in Borneo and Sumatra, and can travel at great speed along the tops of trees, but when it is on the ground it is slow and awkward. It builds a rough nest in the trees, and when the weather is cold covers itself over with leaves.

The gibbon is the smallest man-like ape, and is the only one that habitually walks upright. Its arms are so long that it can touch its ankles when walking.

The baboons live thickly in parts of Africa, and come down at night to rob the natives' fields and gardens of corn and fruit. They go hunting in troops.

The mandrill is the strangest looking of all the baboon family. Instead of being brown or black or grey, it is violet, blue, purple and scarlet.

them. The people on the ship all fell in love with the baby, and the poor chimpanzee felt himself forgotten and neglected. It became very sullen and unhappy. One day the chimpanzee was missing from his place at the dinner-table. Sir Harry Johnston went up on deck and there saw the wicked chimpanzee about to throw the baby overboard. The animal had found its little rival sleeping in its cot, and, thinking that if the child were thrown into the sea there would be no more rivalry, was in the act of ending the poor baby's life when its master caught it. As soon as it heard Sir Harry Johnston coming, it put the baby down on the deck and ran away.

How a Mother Chimpanzee Protected Her Babe from the Hunter

In its wild state the chimpanzee loves to range among the trees as the gorilla does, but it goes about on the ground a good deal. It is not such a solitary creature as the gorilla. Large numbers of chimpanzees are sometimes to be met together. They show great love for their babies. Once a mother chimpanzee sat with her little one watching a hunter. She did not know what a gun was. But when she saw him raise one to his shoulder and point it at her she seemed to know that he meant to do her harm. So the poor creature covered her baby as well as she could with one hand, and with the other she made signs to the man to go away, just as a woman would if her little one were threatened.

Another one, when shot, put its hand to its side, then, when it felt the blood gushing between its fingers, it held out its hand to the man who had shot it, with a most pitiful look, as much as to say, "See what you have done, cruel man." The man who had fired the shot said that he felt as if he had committed a murder, and never again did such a thing.

The Orang-utan, That Skips Along the Tops of Trees

The orang-utan is somewhat like the chimpanzees and the gorillas, but it does not live in Africa. Its home is in Borneo and Sumatra. It can travel with great speed along the tops of trees, but when it is on the ground it is slow and awkward. It rarely walks in an upright position, and has to keep touching the ground with its knuckles. It is the slowest of the apes when on the ground. It cannot put the sole of its foot flat upon the ground as we can, but walks upon the outer edge of the foot. This makes it look very shaky, and like a baby or an old man.

It builds a rough sort of nest for itself in the trees, and when the weather is cold or damp covers itself over with leaves. It eats figs and the leaves and blossoms of various trees. Generally it can get enough to drink by sucking the dew from leaves, but if the weather is dry it has to go in search of water.

Strange as all this sounds, the orang-utan, when caught young, becomes very good friends with human beings. Some years ago there was one at the Zoo, which was very fond of its keeper. Some of our friends went one Christmas morning to see it. The keeper let it out of its cage in a big house. It did all sorts of pretty tricks to please him. It really tried to talk.

When it had been playing for some time, the orang wanted to have a look out of the window. She crept quietly along, hoping that her keeper would not mind. He called to her, "You come here this minute!" She looked at him, but wanted to have another peep out of the window. "Now I'm cross with you," he said, and he pretended to be angry. The poor animal was in great distress. She leapt down from the window, she rushed up to him, she put her great arms round his neck, and kept kissing him till he forgave her.

The Gibbon, Which Leaps Like a Huge Bird Through the Forest

There is another of the man-ape family of which we have not yet spoken. This is the gibbon. The largest of these is a little over three feet high, but it does not look big, for its body is slim, and its long arms, by the aid of which it can touch its ankles when walking, make it look shorter. It is the only ape that habitually walks upright. To do this it balances itself by waving its arms aloft. Gibbons are seen at their best when in the trees, for they are the finest climbers in the world. They might be made of rubber, so wonderfully do they leap from tree to tree. Some of their leaps measure as much as forty feet.

Fancy for a moment that you are looking at one. It hangs by one hand

SOME MEMBERS OF THE GREAT MONKEY FAMILY

The proboscis monkey is one of the queerest looking and ugliest of all the monkey tribe. It has a long nose almost like a tiny elephant's trunk.

The Barbary ape scampers about on the Rock of Gibraltar. These apes climb splendidly, and are the only monkeys that now live in Europe.

The coaita, or red-faced spider monkey, has a beautiful tail, which, when not used for climbing, is carried over the back with a curl at the end.

The Indian monkeys ought to be the happiest of all their tribe, for they are regarded as sacred. They have beautiful groves and temples in which to live, but they go into the cities and villages, and shops and bazaars and houses teem with them. No one is allowed to kill one of these troublesome monkeys.

The Photographs in these pages are by Lewis Medland Gambier Bolton, the Autotype Co., Chas. Reid, W. Dando and A. Rudland.

from the branch of a tree. Suddenly, without any sign of effort such as even a bird would make, it darts away through the air to a distant branch. It catches this with its other hand, then, without resting for an instant, leaps straight on to another branch, and away again without stopping to rest or gather strength. It can go on like this for hours. Sometimes as its hand clasps a bough to which it has sprung the gibbon will spin itself right round the branch, then be off again to another, so quickly that the eye can hardly follow it. It looks like a huge bird flying through the forest.

SOMETHING THAT NO ANIMAL BUT A GIBBON COULD DO

This is what a gibbon once did: It was resting when it saw a bird flying. The gibbon took a spring, caught the bird with one hand, went sailing on through the air, and with its free hand caught the bough at which it had aimed.

Another, which was tame and in a great cage, like a room, suddenly swung itself full at a window. Everybody thought that it would crash through the glass. But no; the wonderful creature caught the thin wood between the panes of glass, and, almost with the same movement, sprang back again to its first place. This requires great strength and skill. Nothing else in the world could do it.

Although it will bite if angry, the gibbon can be tamed, but you would not want to keep one long if it took to calling as it does in the woods. It has such a piercing voice that its cries can be heard for miles.

A GIBBON THAT USED TO STEAL HIS MASTER'S SOAP

Gibbons love their babies, and may be seen to take them down and wash their funny little faces in a stream. One which was tame loved to play tricks on its master. It would steal his soap if he were not looking. One day its master was writing and pretending not to see; but he did see Master Gibbon quietly take the soap and steal off across the room with it. Then he spoke, quietly, and not in a temper. The gibbon looked quite ashamed. It went softly back across the room and put down the soap in the place from which it had taken it.

Now we pass to the monkeys, of which there are many sorts. They are divided into two great families: those which live in America and those which do not. These others we call the Old World monkeys. You can always tell the difference at a glance. The American monkeys have their nostrils set wide apart; the Old World monkeys have their nostrils close together.

There is a very ugly monkey in Borneo called the proboscis monkey. You know that proboscis means a trunk or snout, and this one is called the proboscis monkey because it has a nose like a tiny trunk. But even that has the nostrils close together. The American monkeys have two more teeth than the monkeys of Africa and Asia, and two more teeth than human beings. There is another difference, too. The American monkey can use its tail as a help in climbing, as if it were an extra hand or foot; the Old World monkeys have never learnt to do that.

THE LIVELY MONKEYS THAT LIVE IN AMERICA AND INDIA

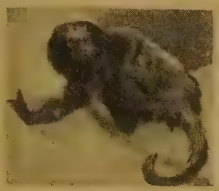
Of the American monkeys the best known are the coaita and the howlers. The coaita has a small, slim body, but a beautiful tail, which, when not in use for climbing, is carried arched over the back with a curl at the end. This monkey should be better able to walk than the man-like apes, but it cannot. If it wants to toddle a few steps on the ground, it has to swing its tail about to balance itself. The howler is a savage-looking little fellow, but his howl is worse than his bite. That is dreadful, and is kept up all night long.

The Indian monkeys ought to be the happiest of all their tribe, for in India they are regarded as sacred animals. They have beautiful groves and gardens and temples in which to live, but they go into the cities and villages; and shops and bazaars and houses teem with them. Woe to the man who dares to kill one of the people's pets. It really is not nice to have them swarming everywhere, running over food which people eat. Still, if they are properly treated they can be great pets. Here is a story to show you how clever and amusing they are.

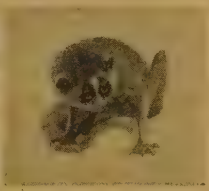
A gentleman in India was going for a holiday, so he asked a friend to take care of his pet monkey. "She is very good and very clever," he said, "and she looks after four little baby dogs for me." Well, the friend took the monkey and the puppies, and they were all very well behaved. The monkey looked so carefully after the puppies, and they were so good, that it might have been a real nurse with little children. The gentleman was delighted, and he gave the monkey a large handful of nuts.

The aye-aye is a strange animal. One of its fingers, instead of being like the rest, is thin and long like a bird's claw. It uses this for tapping the bark to see if there are any grubs hidden in it.

That meant trouble for the monkey. If she sat down and ate her nuts, both her little hands would be engaged, so the puppies would stray away from her. She could not bear the thought of that. She wrinkled up her little face as she wondered what she was to do, for she badly wanted to eat the nuts, and at the same time she wanted to guard the baby dogs. At last she knew what to do.



The marmoset from S. America is the smallest of all the monkey family, and is easily tamed.



The loris is a slim little creature, with big eyes and a pointed nose. It seeks its food at night.

She took a puppy and laid it down with its head towards the door and with its tail pointing towards the middle of the room. The next puppy she placed with its head towards the window and its tail towards the middle of the room. The third puppy was laid with its head towards the wall, and its tail touching the other two; and the fourth puppy was set with its head towards the fireplace and its tail touching the tips of the other three tails. So the four little doggies lay like this +, heads all pointing outwards, tails all pointing inwards. Then the monkey sat down in the middle, on the ends of all four tails, and so, without hurting them, was able to keep the babies near her while she cracked and ate her nuts.

The lemur belongs to the monkey family, and is believed to be the father of all the apes and monkeys. It now lives in the island of Madagascar. It has a head like a fox but hands like a monkey.

Smaller than the man-apes, but bigger than the monkeys, are the baboons. Their home is in Africa, and they live in hilly parts, whence they come down at night and rob the natives' gardens and fields of corn and fruit. They are not at all nice things. They have great mouths with terrible teeth. They have snouts like pigs. Some of them have silly-looking tails which seem to be rooted far up the back, and curl over and down like a teapot handle. They hunt in great troops, and few animals dare attack them. There is one which has a tail like a pig, but the strangest of all has only a stump for a tail. This is called a mandrill, and is, indeed, a strange animal. Instead of being simply brown or black or grey, it has the brightest colors, violet and blue and purple and scarlet. The end of his snout is scarlet; then in deep grooves along the sides of its face you have purple and blue and scarlet, while the hind quarters are violet. It is a nasty-looking beast. It is hard to be fond of a baboon, it is so ugly and fierce. Still, if you catch one young it will become very tame and friendly.

There was one at the Dublin Zoo, which was very fond of the chief man there, a gentleman named Dr. Ball. Whenever he passed Dr. Ball would go

and have a word with the baboon and give it a friendly pat on the head. But one day, when he was showing a great man around, he forgot the baboon. The baboon was deeply vexed at this, and when his friend next went to see him it would not go near him. It did not forget, and for long after that it would not have anything to do with him. If a monkey sulks or is miserable it does not live long. So it was with this one. It became very ill.

The day came when it could no longer run about. Dr. Ball went to see it. The baboon dragged itself to the front of its cage, and put out its hand to its old friend. Then the poor thing lay down and died.

THE BARBARY APE, THAT CLIMBS THE ROCKS AT GIBRALTAR

There is another monkey which we ought to remember, the Barbary ape. This is the animal which you read of as scampering about the rocks at Gibraltar. These creatures belong to a family of monkeys like those which used to live in England. Their cunning is so great that a man can very seldom get near them.

Perhaps you have seen a tame marmoset, for they are easily tamed and petted. If you have ever seen one, you would scarcely think it to be a monkey, would you? You would take it for a kind of squirrel as you see it darting about its cage, or frisking in the trees of its native forest in South America. If it surprises you to hear that the marmoset, with its curious ways and its bird-like whistle, is a monkey, you will be, perhaps, even more surprized to hear that the lemur is a kind of monkey.

THE LEMUR, THE FATHER OF ALL THE APES AND MONKEYS

Not only does the lemur belong to the monkey family; it is believed to be the father of all the apes and monkeys. Ages and ages ago land stretched out in many directions where the ocean now flows. The lemur is supposed to have been the first of the monkey family, and to have wandered from North America, where it first appeared, into Europe and Africa. When the sea washed away great parts of the land, it left new continents and new islands, so everything that could not fly was shut up where it was.

The lemur tribe, which had scattered to many parts, changed and changed and changed in the course of time. In America it grew into the monkeys with wide-set nostrils. In Africa it grew into the man-like apes and monkeys with close-set nostrils. The lemur which remained a lemur now has its home in the island of Madagascar. That once formed part of the mainland of Africa, but the sea cut it off from the great continent, and left the true lemurs in an island home, hundreds of miles from the east coast of Africa.

The head of the lemur of to-day is like that of a fox, but it has the four hands of the monkey. Like the gibbon, it has a loud voice, and can leap long distances. It moves about at night, and goes so silently that not even a bird can hear its footfalls.

In this quiet way of creeping about it is like another member of its family, called the loris, a slim little creature about the size of a cat, with big, round eyes and sharp-pointed nose. This is also a night worker.

THE STRANGE LITTLE AYE-AYE WITH ITS WONDERFUL CLAW-FINGER

If it is wonderful that lemurs should in time grow into chimpanzees, it is almost as wonderful that they should become aye-ayes. There is hardly a more curious animal than this. It has a body something like a big squirrel; it has large ears without any hair on them, and big eyes which enable it to see at night. But the funniest thing is its hands. Those behind are like the ordinary hind feet or hands of monkeys. Those in front consist of four fingers and a thumb. But the long finger is thin and bony, like a claw of a bird. It is used for tapping the branches of trees, to see if there are any grubs hidden in them. How did the aye-aye come to be as it is? Long, long ago one or two lemurs in Madagascar were born different from other lemurs. The children of those strange lemurs were like their parents; they chose lemurs most like themselves, and little by little an entire tribe of aye-ayes was formed.

It is all very wonderful and hard for little men and women to understand and believe, but these marvelous things do happen in Nature's family of animals.

THE NEXT STORIES OF ANIMALS ARE ON PAGE 677.

THE QUIET HEROES OF THE WORLD

THERE are many kinds of heroes. The soldier who comes home in triumph, to the sound of trumpets and the waving of flags, leaves behind him on the battlefield the hero who has fallen in the fight. It is a fine and thrilling thing to see the conquering hero come, but not less thrilling is it to think of the hero who will never come again. And let us remember, always, the heroes of every day—the boys and girls who do noble things that are not written about in books. Let us remember the great heroism of simple lives, the golden deeds of quiet, simple people. We read in other parts of our book of great things done by great men and women, and many heroes will come into that story of famous people. But we shall read here of great things which have been done by simple people whose names, perhaps, are not known at all. This is the great book of simple heroes and tells of the golden deeds that light up the pathway of the brave.

A VILLAGE OF HEROES

CONTINUED FROM 570

IF you have been to Derbyshire and have traveled among the beautiful hills which are called the Peak Country, you have passed, perhaps, through the little village of Eyam. It is only a hamlet, but the sight of this little group of houses and the little village church is one of the things that ought to thrill every boy and girl who loves a golden deed.

Perched snugly in a green hollow of the rocky uplands, Eyam must have been as pleasant a village to live in as could be found in the days when William Mompesson became rector at the village church and William Stanley preached at the village chapel. That was in the time when the Great Plague of London was raging, more than 240 years ago. Eyam was 150 miles away from London, and no place could have seemed safer from the plague than this.

But the little invisible microbes that carry disease about the world come in many ways. They come on the wind, and they come in the train. They came to Eyam in a packet of patterns posted from London to the village tailor. The Great Plague of London was in that little packet, and in a few days the tailor and his family were in their graves.

There was terror in the village, and one by one the people fled. But the plague remained, and for a year it spread. All through this time the rector and his wife, with the minister at the little chapel, nursed the people through their sickness and sustained them in their grief. In their deep sorrow the people of Eyam were like one family.

Then the brave heart of the rector's wife, Catherine Mompesson, began to fail. People were dying on every hand; there was no hope for her husband and her children, and she urged the rector to fly. In that terrible hour the rector was true to himself. He urged his wife to take away the children and save herself and them. But Catherine Mompesson was not such a woman as that. She sent her children away to friends and stayed with her husband.

The crisis had come. The plague held Eyam fast, and it was clear that any further flight of people from the village would spread the plague in the villages around, perhaps through all Derbyshire, perhaps right up through the North of England, which was yet free from it.

When this time came the people of Eyam, led by William Mompesson and William Stanley, made a great decision, which ought to be written down in the history in letters of gold. They shut themselves off from the world. The church was closed, and every day the people met to comfort one another in a cave. Trade was given up, every man left his work, the schools were shut, and the houses became

hospitals for the sick. Nobody came into the village and nobody went out, and all the work that men and women did was nursing the sick or burying the dead.

For four months Eyam was left to itself without once coming into touch with the world. Had the king died, nobody in Eyam would have known anything about it, so completely shut off were they from the world about them. They shut themselves up in June, and in July 56 of them were laid in the churchyard. In August 72 more died, among them the brave Catherine Mompesson. So, day after day, death took away the brave people of Eyam until, in the middle of October, 1666, when the plague suddenly ceased, there was not one whole family left, and out of 300 people 259 had died.

That is the golden deed of an English village nearly 250 years ago, and the memory of this village of heroes should help to make us heroes all.

THE FRIENDSHIP OF DAMON AND PYTHIAS

DIONYSIUS was a tyrant who ruled the town of Syracuse, in Sicily. Whoever made him angry was put to death. The tyrant's wrath fell one day upon a youth named Damon, who had complained of the cruelty of Dionysius, and Damon was condemned to die. He begged first to be allowed to go to see his wife and children, but Dionysius laughed him to scorn. "Once you get out of my way," he thought, "you will never come back."

Damon said that he had a friend who would answer for his return, and his friend Pythias came forward to offer himself as surety for Damon. If Damon did not come back, he said, he would die in his friend's place.

The tyrant was astonished that a man should love his friend so dearly, and he gave Damon six hours to go to see his wife and children.

Damon expected to be back within four hours, but when four hours had gone he had not come. Five hours, then almost six hours passed, and still there was no sign of him. The happiest man in the prison was Pythias, who actually hoped that Damon would not return, because he was willing and anxious to suffer in his place and spare his friend for the sake of his wife and children. At last the death-day dawned, the very hour drew nigh, and Dionysius came to see his prisoner die.

Quietly and bravely Pythias prepared for his execution. His friend, he said, had had an accident, or perhaps he was ill. At almost the very moment for the execution, however, Damon arrived and embraced his friend. He was tired and travel-stained. His horse had been killed and he had had to get another, but by hard riding he returned just in time to save Pythias from suffering for him. But Pythias did not wish it so. He pleaded with Damon, he pleaded with Dionysius, to let him bear the punishment.

Dionysius had never seen such faithfulness before. Here was something beautiful that he did not think existed in the world — a friendship that welcomed death if death would help a friend. His heart was stirred within him; he wanted men like these to be *his* friends. Going up to Damon and Pythias, as they were disputing, each eager to give his life for the other, he took their hands, set them free, and begged to be allowed to share their friendship.

THE LAST FIGHT AT THE COLISEUM

IN the proud days when Rome ruled the world, and the emperor lived in a palace of white marble, or in a house of pure gold, the Coliseum was the greatest theatre ever known to be set up on the earth.

There to this day it stands, shattered and broken, but still, perhaps, the most impressive ruin in all the world. In the dark days when Rome was falling from her great place in the world, when Peter and Paul were martyred outside its gates, the little band of Christians hid themselves in great holes in the ground lest they should be tortured and put to death. To this day we can walk through the catacombs in which the first followers of Jesus hid themselves from Nero, the monster who lived in a golden house inside the city gates. They say that when Nero's house was burned the streets of Rome ran with melted gold.

In these dark and shameful days, the great white Coliseum, rising storey after

storey from the ground, with great galleries inside to hold 40,000 people, was a wondrous sight to see. Here came all Rome to see the great wild beasts set loose and tear themselves to pieces. Here came the gladiators, strong men trained to fight each other until one of them was killed. Here the Christians were thrown alive to the lions to make a Roman holiday. No place in the world has seen more cruel sights than this.

But slowly Christianity made its way, until the very emperor became a Christian. Then these shameful things ceased and the Coliseum became only a circus. Still, however, the people longed to see the old sights back again, and at times the old fury would break out. The Christians had been growing stronger and stronger for 400 years, when there came a terrible day for Rome. Alaric, the leader of the Goths, came thundering outside Rome, which, having only a poor mad boy for its emperor, must have fallen but for a brave general and his men, who set the Goths to flight.

Such rejoicing there was in Rome that day that the people flocked to the Coliseum, cheering the brave general. There was a great hunting of beasts and a wonderful performance, as in the olden time, when suddenly there came out of one of the narrow passages leading into the arena a gladiator, with spears and swords. The rejoicing of the people knew no bounds.

Then there happened a strange thing. Into the middle of the arena came an old man, bare-headed and bare-footed, calling upon the people to prevent the shedding of blood. The crowd shrieked back to him to stop his preaching and to go away. The gladiators came forward and forced him aside, but still the old man came between them. A storm of stones fell upon him from the angry people. The gladiators struck him down, and the old man perished before the eyes of Rome.

He was a hermit, named Telemachus, one of those holy men who, tired of the wickedness of the world, had gone to live in the hills. Coming to Rome to visit the sacred shrines, he had seen the people flocking to the Coliseum, and, pitying them for their cruelty, had gone to stop it or to die.

He died, but his work was done. All that was best in Rome was stirred by the sight of the hermit slain in the midst of the arena, and there was no more slaughter in the great theatre. It was the last fight at the Coliseum.

THE RUINED COLISEUM, WHERE MEN AND WILD BEASTS FOUGHT IN THE OLD DAYS OF ROME

THE NEXT GOLDEN DEEDS ARE ON PAGE 981.

ROSALIND & CELIA, WITH TOUCHSTONE THE JESTER, RESTING IN THE FOREST OF ARDEN

THE PLAYS OF SHAKESPEARE

FIVE more plays are told here, and these complete our stories from Shakespeare. "As You Like It" is one of his finest comedies. The title has very little to do with the play, but "the play's the thing." The story is one that Shakespeare got from an earlier work than his own, but very few persons have read that work, while millions have delighted in this charming comedy. "The Comedy of Errors" is one of the less important plays of Shakespeare, and was probably an early work. Nor does the "Two Gentlemen of Verona" rank among his great plays. But "King Lear" is perhaps the grandest of all his great dramas written for the stage. It is a noble tragedy, founded on an old English legend or tradition. "The Taming of the Shrew" is a very amusing comedy based upon an earlier story of the same name, and probably Shakespeare did not write the whole of it.

AS YOU LIKE IT

CONTINUED FROM 564

THERE was a kind and peace-loving duke, against whom his brother Frederick successfully rebelled, usurping his dominions. Withdrawing into the great and wild Forest of Arden, this duke, with a number of faithful followers, lived in his exile a happy and peaceful life.

One of his old friends had been Sir Rowland de Bois, who died, leaving three sons, Oliver, Orlando, and Jaques. To the first named, who was the eldest, he left all his money and estates, except one thousand crowns for Orlando. Oliver was charged to give the brothers a good upbringing, but though he provided Jaques with ample schooling, he had a hatred of Orlando, whom he kept idly at home. As Orlando grew up, he could not endure his idle life, and at length demanded the money which his father had left him, so that he might go away from his brother's house.

Oliver, wishing to keep the money, arranged with a great wrestler, who was a servant of Frederick, the usurper, to challenge Orlando to a match, believing that his brother might be killed if he fought the wrestler.

The match was duly arranged, and among the spectators were Frederick's daughter, Celia, and her fair cousin, Rosalind, whom Frederick allowed to live at the palace, although she was the daughter of the exiled duke, the two girls being inseparable friends. When Rosalind saw that so young a man was to fight the champion wrestler, she begged of him to refuse. Orlando, however, was not afraid; and, to the surprize of all, he overthrew the champion.

Frederick, who witnessed the combat, was about to congratulate the victor, when he heard that he was the son of his old enemy, and the praise on his lips changed to anger. But Rosalind, in admiration of Orlando's bravery, gave him a chain she was wearing. This action so annoyed Frederick that he now banished her from the palace. Perhaps he had been waiting for the excuse, as Rosalind was so beautiful in person, and so witty in mind, that his own daughter, Celia, though comely and pleasant, suffered by contrast with the bewitching daughter of the banished duke.

Celia dearly loved her cousin Rosalind, and had not the least jealousy of her charms, so that when her companion was banished from the palace she did not hesitate to share her fate, and they went away together, taking with them the witty jester, Touchstone, whose comic sayings would cheer them on their way.

They did not go, of course, in the rich dresses they wore in the palace. Rosalind, who was "more than common tall," dressed herself like a

shepherd, while Celia put on the clothes of a shepherdess. Their destination was the Forest of Arden, where the banished duke held his rustic court.

Now, when Orlando was returning to the house of his brother, he was met by an old servant of the family named Adam, who loved the youth so much that, knowing Oliver meant to kill him, he had brought all the savings of his life, some five hundred crowns, and urged Orlando to go away with him. They, too, set out for the safe seclusion of the famous forest.

Rosalind and Celia in due time gained the shelter of the forest, where at length they found a lodging in a little cottage; but what perplexed them greatly was to discover little verses written on paper and placed in the trunks of trees, expressing great love for Rosalind. Who could the unknown rhymer be? Celia undertook to find out, and traced him at length to Orlando, whom Rosalind, still pretending to be a man, promised to cure of his love if he would come each day to the cottage and make love to her in the name of Rosalind.

The flight of the two ladies from the palace had led Frederick, the usurper, to accuse Oliver of sheltering them and Orlando, little knowing how Oliver had tried to rid himself of his younger brother. So Oliver, too, was banished from court, and, in common with the other exiles, made for the forest, where he would have been killed by a lion had not Orlando rescued him at the cost of injury to himself.

This noble action so shamed Oliver that he took his brother to his heart; and since Orlando, being injured, could not visit Rosalind's cottage as usual, Oliver went there to explain his absence, and, seeing Celia dressed as a shepherdess, fell in love with her forthwith.

It was arranged that the wedding of Oliver and Celia should take place at the duke's encampment, and as Orlando protested that he still loved the lady who gave him the chain, Rosalind promised she would bring her to him at the wedding of Celia; which she did, of course, by putting off her disguise and appearing there as her own delightful self, not only to the joy of Orlando, but also of her father, the duke.

Oliver was now so happy that he promised to give Orlando his estates; but presently news came that Frederick himself was on the way to kill his brother, the banished duke. By a strange chance, however, he met a good old man who spoke to him of the evil life he was leading, and so changed his mind that he determined for the future to give his thoughts to religion, and surrendered to the duke the dominions which he had unlawfully usurped.

Thus happiness was restored to all.

THE COMEDY OF ERRORS

THERE was a rich merchant of Syracuse, named Ægeon, who had twin boys, and these he christened with the one name Antipholus. It so happened that at the same place there were two other twin boys, whose mother was very poor, and Ægeon conceived the idea of buying these poor children, who had both been named Dromio, to bring them up as servants to his own twins. But when returning to his home by sea a great storm arose, and the merchant himself together with one of his own children and one of the Dromios, was rescued and taken to Syracuse, while, unknown to him, his wife, Æmilia, and the other two children were rescued and taken to Ephesus, Æmilia, however, being separated from the children.

Time went past, and the twin children grew to manhood without ever hearing of each other. When Antipholus of Syracuse and his attendant Dromio were nearly twenty years of age, they set out to search for their brothers, but Ægeon, thinking the searchers lost, as they had not returned after some years, himself went forth to seek for them. At length Ægeon, his money all spent, found himself in Ephesus, where, admitting that he was a merchant of Syracuse, he was thrown into prison by the Duke of Ephesus, because the Duke of Syracuse had recently killed a merchant of Ephesus who had been unable to ransom himself.

Now, we must know that the son whom Ægeon had lost in the shipwreck, together with the other Dromio, had lived all this time in the town of Ephesus, while his wife, Æmilia, had become the head of a priory. Antipholus of Ephesus

was a favorite of the duke. We can therefore see how the errors would begin when Antipholus of Syracuse, of whom Ægeon was in search, together with his particular Dromio, also arrived in Ephesus. As Antipholus of Ephesus had married a charming lady of that town, and his Dromio had married also, while both their brothers were still unmarried and knew nothing of each other, the new-comers to Ephesus had not been there long before everything was in a muddle. The one Antipholus mistook the other's Dromio for his own servant. Dromio of Ephesus mistook Antipholus of Syracuse for his master; while the latter was mistaken by his brother's wife for her own husband. And so on, until none of them knew whether they stood on their heads or their heels.

Out of the last "error" came the explanation, which put all things straight again. For Antipholus of Syracuse, naturally denying to Adriana, the wife of his brother, that he was her husband, and behaving so strangely — as she thought — had to take refuge from her and her friends, who would have had him bound as a madman, by running into the priory of which, unknown to him, his own mother was the prioress.

Adriana appealed to the duke, who was passing the priory at the time, and he was asking for an explanation, when her own husband and his attendant came up to complain of a jeweler who was charging him for a debt which he had not incurred, the debtor really being the Antipholus who was inside the priory.

At this very moment Ægeon, too, was being taken round the town as a prisoner held at ransom, and when he saw Antipholus and Dromio of Ephesus he thought they were the son and attendant of whom he was in search, though they, of course, denied all knowledge of him; but when Æmilia herself appeared she asked the aged prisoner if he was indeed the father of the twins named Antipholus. This he acknowledged, and she then told him that she was their mother and his wife, but, being parted from the children by some fishermen of Corinth after they were rescued, and believing herself alone in the world, she had entered this priory, of which she was now the head.

The tangle was soon made straight after this explanation; old Ægeon was released, and the family united after so many years and so many "errors." The bond of friendship, too, was strengthened when Antipholus of Syracuse became the husband of Luciana, sister of Adriana, his brother's wife.

THE TWO GENTLEMEN OF VERONA

THERE were two gentlemen in the town of Verona, named Valentine and Proteus, who were friends and close companions, until one of them fell in love with a lady of Verona named Julia. It was Proteus who had fallen in love, and that was quite a good reason for his refusing to accompany Valentine on his travels, though perhaps not so good a reason for Valentine to make fun of him. So Valentine set out on his travels alone, going first to Milan.

Meanwhile, thanks to an uncle of Proteus, the father of that young gentleman had been urged to send his son away, so that, when he grew old, Proteus might have no reason to regret that in his youth he had been a stay-at-home, and had neglected to see the world. His father, Antonio, therefore sent his son after Valentine to Milan, that he might have the company of his friend, which he had before refused.

When Proteus got to Milan the comedy had begun, for, behold Valentine, who had scoffed at his friend for being in love with Julia, now himself deeply in love with Silvia, the bewitching daughter of the Duke of Milan. And his case was worse, for, being poor, he could not hope that the duke would let him marry his daughter; whereas Proteus was at least in love with a lady of his own station in life. Like Romeo with his Juliet, Valentine's only plan was to marry his Silvia without her father's consent, and he had quite made up his mind to climb to her window and carry her away, when Proteus overtook him in Milan.

Valentine's scheme was quickly upset, for no sooner had he disclosed it to his friend than the latter, on seeing the lovely Silvia, also fell in love with her, and began to forget his Julia left in Verona. Nay, worse; he betrayed Valentine's intentions to the duke.

The duke now wished to convict Valentine of his intention to abduct Silvia,

without disclosing to him how he had come by the knowledge of the plan. So, pretending that he himself was in love with a widow of Milan, he asked Valentine what he would advise him to do—rather a foolish question, one might think, for a duke who had already been married to ask a young man who was still unwedded. But the wisdom of the duke lay in the fact that he knew none to be so foolish as a young man in love.

Judge if the duke was wise or foolish, when Valentine innocently advised him to do exactly what he had himself purposed doing—to carry away the lady. He even lent the duke his own coat as a disguise, and in the pocket of the coat the duke found a letter from Valentine addressed to his own daughter.

This discovery gave the duke an excuse for banishing Valentine from Milan, and he now set about his own plans to marry Silvia with all speed to a foolish young nobleman named Thurio; but he enlisted the services of Proteus to help forward the match, little thinking that Valentine's friend was himself in love with Silvia.

Proteus was expected to give so poor an account of Valentine to Silvia, and so glowing an account of Thurio, that the maiden could not but decide to forget Valentine in favor of the foolish nobleman. But, of course, Proteus did nothing of the kind. He made his own suit to the lady, and plainly showed her that he was in love with her.

One night Proteus, with Thurio and some musicians, came beneath the lattice window of Silvia in the court of the palace, and sang a love-song to her.

But Silvia was not the only lady who heard this love-song. Julia, no longer able to endure the absence of her lover, had left Verona disguised as a page, and, following Proteus to Milan, she had overheard this song.

When Proteus thinks himself alone, he declares his love to Silvia, who comes to the window, but she chides him for his faithlessness to his friend Valentine, to whom she declares herself betrothed; and he tells her that both the lady he loved at Verona and Valentine are dead, and pleads to have Silvia's portrait. This she promises him, saying that she is loth to be worshipped by him, but since she believes him false, he is the better fitted "to worship shadows and adore false shapes," meaning that he can admire her portrait, but need not admire herself, as she does not care for him. All this is overheard by Julia, who is hidden in the shadow.

Next day Proteus sends Julia—who, disguised as a boy, has applied to him to be employed as his page—for the portrait, and gives her a ring to take to Silvia, the very ring Julia herself had given him before he left Verona. She is comforted to find that Silvia rejects his suit, and that she is displeased with him for his faithlessness.

Silvia, true to Valentine, has determined to escape from Milan, and by the aid of a courtier named Eglamour she sets off towards Mantua, but in a forest they are set upon by outlaws, and Silvia is captured.

Happily, when Valentine had been banished from Milan, he, too, had fallen in with these very outlaws, who spared his life on his promising to become their leader, as they would be honored by having a nobleman for their chief. So Silvia had fallen into the hands of her own true love!

Her escape from Milan led to the duke and the others following in pursuit, Julia going with the party as page to Proteus; and they, too, were set upon by the outlaws, the duke and Thurio being captured and brought before Valentine. There they saw Silvia, and the foolish Thurio exclaimed: "Yonder is Silvia, and Silvia's mine." But Valentine dared him but to breathe her name, and the cowardly Thurio, seeing the bold lover angry, and knowing his own life was in danger, forthwith changed his tune to:

> Sir Valentine, I care not for her, I;
> I hold him but a fool that will endanger
> His body for a girl that loves him not;
> I claim her not, and therefore she is thine.

The duke, admiring the boldness of Valentine as greatly as he detested the cowardliness of Thurio, was at once won over to his daughter's side, and gave her to Valentine who took the opportunity of securing a free pardon for his fellow outlaws, while Julia had meanwhile disclosed to Proteus how her love for him had brought her after him from Verona, and he was once more at her feet.

So the return to Milan meant happiness for all; even for the fool sh Thurio, for if he had lost the duke's daughter he had saved his own cowardly neck, which he valued more highly, if we may judge by his ungallant conduct.

Lear, the aged King of Britain, in his old age gave up his possessions to two of his daughters who did not love him but gave nothing to his daughter Cordelia, who married the King of France. When the French invaded Britain, the old king was sheltered by Cordelia, but she and her father were taken prisoners by the British soldiers. This picture of Lear and Cordelia is painted by Mr. Joy.

THE TRAGEDY OF "KING LEAR"

LONG ago there was a King of Britain whose name was Lear. He was over eighty years of age at the time of the story. So, old and worn with the cares of his kingdom, he decided that the time had come to give up his crown and his possessions, and spend his few remaining years in peace.

But King Lear had no son to succeed him; he had only three daughters. The eldest of these was Goneril, wife of the Duke of Albany; the second was named Regan, who was married to the Duke of Cornwall; and the youngest and most beautiful, Cordelia, was still unmarried. Between his three daughters the aged king determined to divide his kingdom, so he called them together to tell them of his purpose, saying that he would give the largest share to the one that loved him most.

Goneril, a selfish, cold-hearted woman, pretended that she loved him more than her eyesight, grace, health, beauty, honor—more than life itself. Regan, who was like her elder sister in character, protested that even the extravagant declaration of Goneril's love for her father was not strong enough for her. All her joy, she said, was in finding favor with her father.

Carried away by the loving words of these two false, selfish women, the old king gave each a third of his kingdom; but when the kind-hearted Cordelia, who did truly love her father, would not exaggerate the terms of her love beyond those which a dutiful daughter should employ, Lear was enraged at her, and gave her nothing, dividing her share of his kingdom between her two sisters.

Cordelia, however, was not without consolation, as the King of France, who loved her for her sweet and gentle nature, made her his queen. So insensible to reason had the old king grown, that the faithful Earl of Kent was banished because he had ventured to plead with Lear on behalf of Cordelia. The kingdom of Britain was now divided between

Goneril and Regan, whose husbands, the Duke of Albany and the Duke of Cornwall, thus shared the power of the old ruler. Lear fondly hoped to spend his days between the homes of his two children, attended by a retinue of one hundred followers. But he had not been long in Goneril's palace before he discovered that her love for him was all a sham. His daughter did everything she could to make his life unhappy, so that the old man was forced to leave with all his followers.

He went to the castle of the Earl of Gloster, an old friend of his, who had acted in regard to his own two sons almost as foolishly as Lear had done to his own daughters. Gloster's son Edmund, an evil-minded, selfish, and unscrupulous man, was his favorite, while Edgar, his proper heir, a brave and honest son, had unjustly been forced by Edmund's scheming to leave the home of his father.

At Gloster's castle more sorrow was in store for Lear, as there he met his daughter Regan, who had come to plan with Edmund how she might escape the nuisance of her father and his followers. Goneril herself came to the castle, and the two daughters did all they could to make the poor old king unhappy, declaring finally that he needed no servants at all.

Utterly broken-hearted, Lear now wandered away, accompanied only by his jester, but followed soon after by the faithful Earl of Kent, who had disguised himself in order to be of service to his old king. On a wild and lonely heath, and in the midst of a great storm, they came upon a hovel inhabited by one who seemed to be a madman, but was really Edgar, the banished son of Gloster, feigning madness.

Now, the Earl of Gloster would gladly have stood by Lear in his trouble, though he had been warned against rendering him assistance. Gloster, however, told his false son, Edmund, that he meant to help King Lear in secret, and also showed him a letter just received which brought the news that a French army was coming to attack the British. Here was Edmund's chance. He straightway bore the letter to the Duke of Cornwall, and also told him of his father's intentions to succor the unhappy king. For this service his father's earldom was given to Edmund.

In the meantime Gloster had housed in a farm near his castle, not only Lear and the jester, but Kent and his own son, Edgar, both of whom were, of course, disguised. He then had the king sent on to Dover, where the warriors of the country were gathering to meet the French, with whom was Lear's faithful daughter, Cordelia.

The Duke of Cornwall was quickly on the track of Gloster, whom he had arrested, and in his anger at the earl's efforts to save the king he blinded him, but was mortally wounded himself by one of his own followers, enraged at his cowardly brutality.

The tragedy was reaching its height, for the sightless earl was now led to Dover by none other than his own son, Edgar, and nearing the town, he came upon King Lear, gone out of his mind, fantastically decked with flowers. A follower of Goneril, meeting them, sought to kill the Earl of Gloster, but Edgar fought and slew the man, and discovered that he was the bearer of a love-letter from the faithless Goneril to his own stepbrother, Edmund.

Lear was now brought to the French camp at Dover, where his daughter Cordelia, who had never ceased to love the father who had wronged her so much, received him tenderly, and tried to console the aged king, now as feeble in mind as in body.

But the war between France and Britain was not so fierce as that which now raged between Goneril and Regan. These two faithless sisters had both fallen in love with the villain Edmund. When Edgar gave Goneril's letter to the Duke of Albany, the duke challenged Edmund to a duel, just after a battle had been fought in which King Lear and Cordelia had been taken prisoners.

Edmund was fatally wounded by the duke; but meanwhile the two unhappy women who had been the cause of all this sad tragedy had settled matters in a drastic way. Goneril had contrived to poison her sister Regan, out of jealousy at her love for Edmund, and she, when her own guilty secret was laid bare by the discovery of her love-letter, stabbed herself and died.

All too late, Edmund, now dying of his wound, and repenting of his evil conduct, asked that the life of Cordelia might be spared; but, at the very

moment when he was breathing his last the weird figure of the old king carrying the dead body of Cordelia appeared. The last blow in the great tragedy had been struck.

The Duke of Albany, who had always been friendly towards King Lear, despite the evil influence of his wife, would now have had the aged king resume his power, but that was hopeless; his heart was broken and death was upon him.

The duke, however, showed his feeling for Lear by rewarding both Edgar and Kent for the services they had rendered to the poor old king in his hour of need.

Petruchio was a gentleman who undertook to "tame" Katharina, a very hot-tempered lady whom he married. His plan was to pretend he was always in a temper. He dressed absurdly, and when proper clothes were brought in he threw them on the floor and behaved so badly that at last Katharina saw it was best to obey her husband. His plan succeeded, as we learn in "The Taming of the Shrew."

THE TAMING OF THE SHREW

A "SHREW" means a woman whose temper is fiery; who is never satisfied with things; nagging, peevish, always finding fault.

We are to suppose, then, that Katharina, the elder daughter of Baptista, a rich gentleman of Padua, in Italy, was so ill-tempered that she could be described as a shrew. Perhaps at heart she was neither selfish nor ill-feeling; but possibly, being spoiled by her parents as a child, she had grown into these unfortunate habits, which made her so unpleasant a companion that there seemed little likelihood of anyone marrying her, although it was known that she would receive great wealth from her father.

Quite the opposite to Katharina was her younger sister, Bianca. Charming to look upon, gentle and winsome in her character, and beloved by all, we may be sure there was no lack of gallant gentlemen who would willingly have married Bianca. To some of her suitors Baptista announced that he would not allow Bianca to be married until her elder sister had found a husband. In the meantime, he intended that the young ladies should have the best possible teaching in the accomplishments of the time, and asked that any good tutors might be recommended to him.

At this time there had come to Padua, which was famous for its colleges, a young gentleman of Pisa named Lucentio, son

of a rich noble of that town. His purpose in Padua was to study, but he had no sooner set eyes on Bianca than he fell in love with her, and thoughts of study were soon dismissed.

On learning that Baptista wished to engage tutors for his daughters, Lucentio planned with one of his own servants, Tranio, that the latter should impersonate him as a rich gentleman come to Padua to pay court to Bianca, while he himself would contrive to be engaged as tutor to the two ladies. It was so arranged, and before long Bianca was in love with her handsome and agreeable instructor.

But in the meantime one of Bianca's other suitors, a gentleman named Hortensio, had enlisted the aid of a merry friend from Verona, who undertook no less a task than to marry Katharina, and thus leave Bianca free to marry Hortensio. This was Petruchio, who was at once clever, masterful, high-spirited.

Petruchio began his love-making to Katharina by addressing her as "Kate," in order to annoy her; when she scolded he pretended to find her "passing gentle"; and, finally, when she struck him he promised her as good as he had got, assuring her that, whether she cared for him or not, he meant to marry her. When her father came upon the scene, the dashing Petruchio calmly informed him that they had arranged for the wedding to take place next Sunday.

When Sunday came, and Petruchio arrived for the wedding, he presented an extraordinary figure, wearing a new hat, an old coat, shoes that were not neighbors, a rusty sword, and mounted upon a horse so old and skinny that it was of no more value than the rubbishy harness it wore. His servant was no less strangely attired.

Baptista was thoroughly ashamed of the bridegroom, but Petruchio refused to change his clothes, as this was a part of his scheme for "taming the shrew."

In the church he behaved quite scandalously, insulting the priest, and kissing Katharina so loudly that the building echoed with the sound. Nor would he wait for the wedding feast, but set out at once with his wife for Verona.

Their journey was one series of misfortunes, and the bridegroom behaved as if he cared nothing for his bride. The last part of the way they had to walk, owing to their horses taking flight when Petruchio was thrashing his servant, and they arrived, footsore and weary, at his residence, where he made matters worse by complaining about everything, throwing the food on the floor and beating his attendants.

In this way Petruchio behaved for a time, and was always in so bad a temper that Katharina had no chance to show how bad her own temper was. Hortensio came to see them, and Petruchio decided they would return with him to Padua, promising that they should both go there dressed according to their rank. But when costumes for Katharina and himself were brought in to choose, he declared them all unsuitable, throwing them on the floor, and when they did set out he was still wearing his dress of odd clothes.

At Padua, meanwhile, Baptista had promised Bianca would be wedded to her richest suitor, and this was Tranio, who was playing the part of Lucentio, while the latter pretended to be merely the teacher of Greek and Latin. Tranio arranged with an elderly man to impersonate the father of Lucentio, and got him to give his consent to the wedding, inviting Baptista to his house to arrange the matter, while Bianca was to follow with a servant.

Bianca did follow, but with the pretended tutor, Lucentio, who took her to church on the way and married her. When Lucentio arrived at his own house at Padua, his real father from Pisa had just come to visit him, so that Lucentio was in time to kneel at his feet and ask at once his pardon and his blessing.

The journey of Petruchio and Katharina back to Padua was conducted in the strangest way, Petruchio insisting on his wife agreeing to his most ridiculous statements, and making her kiss him publicly in the street under threat that they would return to Verona if she were ashamed to do so.

Indeed, by the time they reached Lucentio's house there was no more obedient wife in all Italy. Katharina was actually so "tamed" that she even made a little speech to the other ladies present on the virtue of a wife's obedience to her husband.

THE NEXT STORIES OF FAMOUS BOOKS BEGIN ON PAGE 697.

WHAT THIS STORY TELLS US

THIS story tells us of one of the things of which the earth is made, a thing so wonderful that it seems when we read of it as if we were reading about fairies. This wonderful thing is called Radium, and nobody knew anything at all about it until a few years ago. Radium is one of the things that keep the earth warm, and it has the secret of making heat out of itself, just as the plant has the secret of making food out of the air. All the radium that men have found throughout the world at present is not enough to fill a pill-box; you could put all the radium that has been seen by the eyes of men on a single dime. But *there is a very little radium everywhere*, and it is the presence of this very little radium everywhere that helps to keep the earth warm. We may think of radium as a little bit of fire everywhere—a fire that never goes out, but that will keep the earth warm for ages and ages to come.

THE FIRE THAT FEEDS ITSELF

CONTINUED FROM P. 568

WE have recently made the astonishing discovery that, besides the way we read of on page 568, there is another way, undreamed of until this century, in which the earth is kept warm, and has for ages past been kept warm—and will be kept warm for no one can say how many ages to come.

It is true that the earth is losing its heat, but we have discovered that, while it is losing its heat, it is actually *making new heat for itself*. Of course, you see the importance of this. If you have six pennies in your pocket, and spend one every day, when a week is out you will have nothing left. But if, while still spending, you can also make a new penny every day—well, you can go on for a long time at that rate! Now, that is what the earth is doing; it is spending its heat—which is a good thing for us, for we should not be here without it—but it is also making new heat. Nay, more; there is every reason to believe that the earth is making every day, or every year, or every million years, at least as much heat as it loses. Therefore, it is not getting cooler; just as the little boy who spends a penny and makes a penny every day is not getting poorer. Now, the stuff which makes the new heat for the earth is called radium.

If I were to start to tell you now all the wonderful things about radium, I doubt whether I should ever finish, for new things are being found out almost as fast as we can write about the old things. But here, at any rate, we must read about radium, because we must clearly understand this discovery regarding the earth's heat—one of the most wonderful and important discoveries ever made. Here, then, let me explain for a moment—what we shall come back to—that matter is made up of many different kinds of things, which are called elements.

It used to be thought that there were four elements—earth, air, fire, and water—and little boys and girls still play a game based on that idea. But now we know that none of these is really an element. We all know many real elements, however—lead and gold and silver and quicksilver, and also the oxygen of the air, which we are breathing at this moment. Well, radium is just another of these elements. It is one of the last to be discovered, perhaps one of the rarest of all elements, as there is very little of it to be found anywhere; but it is far more wonderful than all the other elements put together.

Now, one of the wonderful things about radium is that it is all the time making heat out of itself. Lead and silver and oxygen cannot do this. If they are warm it is because something has made them warm from outside, just as the poker—which is made of the element iron—becomes warm if you put it in the fire. But radium

left by itself, without any warmth from outside, makes heat for itself, and, wherever you find it, it is always a little hotter than its surroundings—like nothing else in the whole world, except, of course, fire itself. That, though it is rather difficult to explain, is an absolutely different thing, because, so to say, fire has to be paid for. In fact, the heat produced by a fire is really heat from the sun, which was stored up in the coal and is given out again.

THE MYSTERIOUS POWER IN RADIUM THAT WILL HEAT THE EARTH FOR AGES

But the extraordinary thing about radium is that it does not require to be burnt in order to make heat, and that the heat which it makes is not the sun's heat of the past given out again, but is absolutely made brand new, so to speak, on the spot.

Now, this is a subject on which we can easily get wrong ideas, and quite the most wrong idea that we could get would be to suppose that radium gets its heat from nowhere, that it makes it out of nothing. That is not so. If there is anything that we are absolutely certain of, it is that nothing is made out of nothing. If radium makes heat, as it does, and if it does this without any heat from outside, as it does, then we know for certain that there is some kind of power inside radium itself which radium uses in order to make heat. That, we know, is exactly what happens.

Our new discovery, then, does not mean that the earth has a source of heat which can never be used up, but that it has means of making heat which will probably not be exhausted for ages longer than we can think about.

ALL THE RADIUM THAT MEN HAVE SEEN COULD COME INTO A PILL-BOX!

But we have left out something; we have not satisfied ourselves that there is enough radium to do all these things. All the radium in the world *that has been collected* would not weigh as much as a golf-ball! Not only so, but there are only one or two known places in the world in which radium can be found. Little streaks—or veins, as they are called—of stuff containing it are found in the granite and slate in Cornwall, and there is a considerably larger quantity in Austria. Yet in the course of several years, since radium was first discovered, not enough has been collected to fill a pill-box.

Plainly, if that were all there was to say, it would be absurd to suggest that the radium in the earth is enough to keep the earth warm. But now the discovery has been made that there is radium to be detected, though perhaps not to be *collected*, in other places besides Cornwall and Austria. I said that radium was one of the rarest of the elements, if not the very rarest.

We may say that while there is only very little of it to be found anywhere, yet there is *a very little of it to be found everywhere*. Lately men have taken samples of water and every kind of earth and rock that you can think of, and wherever they make tests to find whether radium is present, there they invariably find it. Of course, the amount is extremely tiny. If it were not, it would make the earth so hot that we could not live on it. Perhaps you will scarcely believe how tiny a proportion of radium can be detected; but this is not so difficult to understand if we remember that radium is a very extraordinary and active substance, which is, so to say, doing things all the time, and doing them so powerfully that its presence is not difficult to detect.

THE VERY LITTLE RADIUM THAT LIES ABOUT US EVERYWHERE

You can find a very small boy in a very big house if he makes noise enough, and you could find a needle in a haystack if it were shouting all the time. That is the sort of thing which explains how it is possible to find radium present in a rock, even though there is only one part of it there to a million million parts of rock. And that is possible, whatever you may think. The man who has been able to do this is an Englishman. His name is the Hon. R. J. Strutt, and he is the eldest son of Lord Rayleigh, at one time the president of the Royal Society. Now, that is the proportion of radium which actually occurs in one of the most familiar of all rocks, granite, and in the same way radium is found in other rocks and minerals.

Now you will say next that, even supposing there is this tiny amount of radium in rocks and minerals in general, all over the crust of the earth, and even supposing that some such quantity as this could be found in all the stuff that makes up the crust of the earth—which

is supposed to be about forty or fifty miles thick—yet surely such a tiny proportion could not be enough to make up, day by day, for the amount of heat which the earth is always losing into space. But the extraordinary fact is that this very small amount of radium is abundant for the production of enough heat to keep the earth as warm as it is, as warm as it has been for ages past, and as warm as it will be for ages to come.

RADIUM MAY BECOME A CLOCK TO TELL THE TIME OF THE PAST

The wonders of radium never cease, and the more wonderful we find it to be, the more information it gives us. It is now turning out to be, in a sort of way, a clock which tells us of the past. I can show you how this is, and it is not difficult. As radium goes on making its heat, it changes, and one of the results of its changing is that it always produces another element, called *helium*—after the Greek name for the sun, because it was first found in the sun in a wonderful way of which we shall talk afterwards. We can watch radium from day to day, and we can measure precisely the exact rate at which it makes helium out of itself. Now, that gives us exactly what we want; for it is plain that if, in a certain kind of rock, we find a certain quantity of helium—which is always made from radium and never in any other way—then it is quite easy to calculate how old that rock must be.

That is what is being done now. Men are examining different kinds of rock from different levels in the crust of the earth, and are finding out exactly how much helium they contain, as well as how much radium. The amount of helium and radium tells them how long the radium has been in the rock—that is to say, how old the rock is.

THE VERY LITTLE PART OF THE EARTH THAT WE KNOW ABOUT

Here, then, is a new and unexpected way in which we hope soon to get a better answer than any we have ever had before as to the age of the outer layers of the earth's crust. As to the deeper part of the earth's crust, we can say very little; but that is less interesting, as they were laid down long before life appeared.

The kinds of rock that we can get at to examine quite easily are those which belong to the ages of life, and we can, to a certain extent, examine other rocks, such as granite, which were made under the influence of great heat before life appeared, and pieces of which have sometimes got squeezed up to the surface, so that we can get at them.

Now, in finishing this part of our story, I want you to reflect with me over something which I think is very wonderful. Here we are on this earth of ours, and we cannot leave it; but you might at least think that, though we cannot leave it alive, and perhaps do not want to leave it, at any rate we can thoroughly examine every part of it. Now, this is not so. There are parts of the earth, even at the surface of it, which no human eye has ever seen, and only recently have the North and the South Poles been reached. No one has ever been to the top of the highest mountains in the world. The ocean of air that floats above us is part of the earth, of course, and it probably extends at least something like a hundred miles high. No one has ever been as high as a tenth part of this distance.

NO MAN WILL EVER GET DOWN TO THE CENTRE OF THE EARTH

Then, again, as to digging downwards. Certainly, no human being will ever get down to the interior of the earth. His whole body would have melted into gas long before he got there. But take this thin crust, which has produced such wonders. Compared with the whole thickness of the earth, it is a mere nothing—40 miles out of 8,000; that is to say, the crust of the earth is 200 times thinner than the earth itself. There never was an orange with anything like so thin a skin as that.

Now, a little while ago we were talking about cutting the earth in half and seeing what it would look like. What have we done in the way of cutting into this thin crust that supports us? Practically nothing. We measure coal-mines by thousands of feet, but as we go down it gets very hot, and it is a very serious matter to get air enough down to these levels. When all is said and done, the deepest coal-mine has only got as far as the coal level, and that, compared with the whole crust of the earth, is almost nothing at all.

But this is the point I want you to remember, and this is why I raised the question at all. It is because I want you

to distinguish, now and always after this, between what man can do with his body and what man can do with his mind. I do not think there is any more important thing that the wisest of all the wisest men can teach us.

THE POWER OF OUR BODIES IS REALLY VERY SMALL

In a thousand ways our bodies are the most wonderful things in the world, yet they are sadly limited, and in a few years they begin to grow old, and then they die. They require a great deal of care, but no care will keep them alive very long. They cannot leave this tiny earth—for it really is tiny, and we only think of it as large because our bodies are so very much tinier—they cannot even be taken to every part of its outside; they can only soar a mile or two into its atmosphere, and dig a mile or two into its crust, and all that at very great cost and at very great risk.

But that is only the body we are talking about; it would all be false if it were said of the mind. You can sit where you are sitting now, and your mind can go to the farthest star, and a million miles beyond it. We knew what the South Pole was like, before anyone had ever been there. We know how deep the ocean of air is, and what kind of gases are found near its surface. We know the thickness of the crust of the earth, and are learning how to measure its age. The mind can measure the height of Mount Everest, though no human foot has ever stood upon its summit.

THE POWER OF OUR MINDS CAN NEVER BE MEASURED

Every day the mind is teaching us more about the earth. Every day, though the eyes of our heads are getting more and more short-sighted—because we all spend such a lot of time nowadays reading and writing, instead of running to catch our dinner in the forest or on the plain—the eyes of our minds are getting to see further and further, and wider and wider, and to see more and more at a time, and to understand what it is that they see.

So, though we must not be proud, and though all that we know about the earth or anything else is only just a speck compared with all that there is to know, yet we must not be ashamed because our bodies are so limited in their powers. We are human, and that is to have human minds. We have done great things already, and we shall some day make the earth, of which we know so little at present, a home that is worthy of us.

The body is weak and needy, and cannot do much we should like it to do; and the body dies, and new bodies have to begin at the beginning. But the mind, though it makes mistakes and cannot do all we should like it to do, is far more powerful, and its eyes can see what the bodily eyes have never seen and never will see. And, though we die, the work of our minds, if it is good and real, does not die. The minds that come after us *do not have to begin at the beginning*, though their bodies do. They stand on our shoulders, so to say, and thus they see farther.

OUR BODIES MAY DIE, BUT OUR MINDS GO ON FOR EVER

Mr. Strutt found radium in many parts of the crust of the earth, but this was because Monsieur Curie—who is already dead—and his wife had found radium before. And they themselves could do this because of the work of a great Frenchman, M. Becquerel, who himself was building on the foundations laid by those who went before him. Their bodies are dead, as ours will be before this century is finished; but their work lives, as ours will also.

We must go back to the beginnings of science thousands of years ago, and name thousands of men before you have really named all those who were working through Mr. Strutt, though their bodies were scattered into dust ages ago, and even the names of many of them are forgotten. And this is the way in which mankind goes on and on. We have learned to read and to write, but we did not invent reading or writing, or letters or paper, or printing, or ink. Dead men and women have done most of the works by which we live now; and we, too, can help men and women who are yet unborn. Animals cannot tell what they have learnt to their children; we can. And so we learn the truth, and how to forget the untruth, and that is progress.

THE NEXT STORY OF THE EARTH BEGINS ON PAGE 851.

GRAPE FRUIT

WHERE THE FRUIT COMES FROM

CONTINUED FROM 423

WE who live in the United States and Canada should feel greatly blessed in the abundance and cheapness of the fruit which we ourselves grow or else are able to get at small expense. Nothing is more disappointing to Americans, when they travel in Europe, than their inability to get all the fruit they want at any corner. But you cannot do this anywhere except on the banks of the Mediterranean, and even there you miss some favorites. English people are sometimes very boastful about their fruit, and when we taste the apples, pears, cherries and plums which have grown on the sunny side of some wall as carefully shielded and tended as people in Manitoba would tend peaches, we appreciate how delicious they are; but the trouble is that comparatively few such fruits can be raised in Great Britain—not nearly enough to supply the demand, even at the high price the owners are compelled to charge. Some small fruits, however, are numerous and delicious, strawberries, for instance, and gooseberries—no American or Canadian ever knows what gooseberries are capable of until he has tasted the English ones.

All over North America apples are so numerous and cheap that often thousands of bushels are allowed to fall to the ground and rot, because the owner of the orchard cannot sell them for enough to pay for picking them. In the meanwhile, perhaps, city markets not far away have been fully supplied with apples that have come from farther away in the other direction. This is due to the schemes of the larger buyers and dealers, who will gather their stock where they can do it to most profit, with little regard to the orchardist. Lately the city markets all over the country have offered very large, shining, red apples that come all the way from the valley of the Columbia River, where a large association of growers not only raise this big, beautiful fruit successfully, but have powerful arrangements for sending the crop all over the country.

Peaches are almost as common and cheap as apples in this country, and the largest supply for the East comes from Georgia in the South, and from Michigan and southern Canada in the North; but they are grown almost everywhere, and most of the fine canned peaches that we buy in the shops come from California. Apricots and nectarines come mainly from the southwest and Pacific Coast. The West also supplies us with immense quantities of melons.

The large size and fine appearance of the fruit grown in Oregon and California and sent to the middle and eastern states have caused it to rival that grown nearer home, and it may be

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bought in almost every town in the United States and Canada as cheaply as good home-grown fruit. This is because it is handled in large quantities in a very business-like way, and because it comes to market earlier than most of the eastern fruit.

WHERE OUR ORANGES AND BANANAS COME FROM

Most of the oranges eaten in the United States are grown in Florida and Southern California. Oranges from Florida are usually very juicy, while the large navel oranges are mostly grown in California. Whole train loads from these states are sent out at one time, and distributed all over the continent. We also get great quantities of oranges from Cuba, Porto Rico, Jamaica and other West Indian islands. Small oranges, later in the season, come from the Mediterranean —especially from Spain and Italy; and it is from this region that England gets most of its supply. Lemons are also raised extensively in California and the West Indies, and sent all over the country; but the greater part of our enormous supply of this fruit is brought to us from Sicily and Southern Italy. Oranges and lemons also come from Palestine.

Another delicious fruit with which Florida and California keep us supplied is the grape fruit, which is grown in large quantities in both states. It also grows in the West Indies and in Mexico; but its original home is in the Pacific islands. It is known also as the pomelo, and two varieties—one of which has crimson flesh —are called the shaddock. These are more often grown in Jamaica. The grape fruit belongs to the same family as the orange, and is cultivated in the same way. Its large, yellow balls often grow in grape-like clusters, and it is from this fact that it gets its name. This fruit reaches its greatest perfection in Florida.

Florida also gives us the little kumquat, another relative of the orange family. It makes a delicious salad, and as the skin is sweet, skin and pulp are both eaten. The plant is small and is often grown in pots.

One of the things we cannot grow, even in California, is the banana, and not very long ago this tropical fruit was a luxury hardly known outside of eastern and southern seaports; but now it is common and cheap all over the country. Bananas come to us by the ship load from **Cuba and** the other West Indies; but **mainly from** Central America, especially Southern Mexico (Yucatan), Guatemala, Nicaragua and Costa Rica. Not only do the people of those countries produce them in large quantities, but many farmers from the United States and Canada have settled in those places, and planted great fields of bananas of various kinds, as well as orange and lemon groves, coffee groves and plantations of pineapples, for sale to us. Jamaica has very extensive plantations, but most of its product goes to England and other countries of Europe.

The pineapple is another delicious tropical fruit which has come into common use. Florida produces a great quantity, and is yielding more and more; so does Southern California and Mexico. The greater part of our supply, however, is derived from the shores and islands of the Caribbean Sea, and is brought to us in the fruit steamers, dozens of which, all very swift and built especially for this trade, ply back and forth between the tropics and our northern ports. Large quantities of pineapples are also grown in Hawaii and some of the best of our canned supply of the fruit comes from these islands.

WHERE GRAPES AND OLIVES GROW IN LARGE QUANTITIES

Grapes grow in all temperate countries, and in parts of the United States and the south of Canada vast vineyards exist, so that we have no need to import table grapes. Yet there is one sort, the large, greenish-white, fleshy grape called the Malaga, from a town in Spain, which we bring in great quantities in the autumn from the Mediterranean countries. Even this importation has lessened, however, because large vineyards of these are being grown in California. California also grows an immense amount of raisin grapes, which are made into excellent raisins, so that we no longer need to depend on Southern Europe for raisins. Greece and the Levantine countries still send us, however, all the "Zante currants" we use, which are not really currants, but small dried grapes. Europe gets all its raisins from Spain, Greece and Turkey.

Olives have been grown in California since the Jesuit Fathers first planted them in the garden of San Diego Mission. There are many olive groves now in that state, and it sends us stuffed and pickled

HOW THE ORANGES AND LEMONS GROW

Almost all our oranges come from the warm parts of California and from Florida, where they grow freely. This is an orange-grove in California. The original home of the orange was in Asia—perhaps in China.

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A Spanish girl picking ripe oranges in the South of Spain. The famous bitter oranges for marmalade come from Seville, in Spain. Scents, as well as marmalade, are made from the fruit of the orange.

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This is an orange-grove in Florida. The country grows so many flowers and fruits that it deserves its name, which means, "Land of Flowers." Sometimes frost comes. As the orange cannot grow in frost, the farmer lights oil-fires in his orchards, and the smoke forms a blanket round the trees and keeps frost away.

The blossom of the orange in Florida. The orange forms in the centre of the blossom. Then the petals fall, and the fruit uses the strength of the plant.

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Lemons are growing here. They need the same sort of climate as the orange. Though always sour, they make pleasant drinks, medicine, and scent.

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olives in attractive-looking glass bottles, ripe black olives, and some of our best olive oil.

We in this country know nothing of fresh dates. Dried, they come to us from Egypt and other parts of Africa. To us the date is a luxury; to people in the East, it is their food and the principal part of their wealth. A tree begins to bear fruit when eight years old. It is at its best when thirty years old, but if properly treated it shows no weakness till over one hundred. It is meat and drink in the East.

WHERE THE FIG GROWS AND HOW THE PRUNE IS MADE

At one time, although figs were grown in many of the southern states, and especially in Florida and California, we were dependent on the Mediterranean countries for almost the whole of our supply of this fruit. Lately, however, fig growing has increased in California, and large quantities are dried and canned in that state every year. The Smyrna fig has been introduced into California, and now reaches its full perfection there. California and Florida also grow guavas and mangoes.

Few of us, as we eat some plump, juicy prunes for breakfast, or a delicious prune whip for dessert, are aware that the state of California produces more prunes than any other country in the world. They are also grown in the states of Washington, Oregon and Idaho. As we know, prunes are dried plums, but all plums will not make prunes. Three varieties, commonly called the petite, the Italian and the silver prunes, have been found best for this purpose and hundreds of acres of these plums are grown. The fruit is allowed to become very ripe, and then picked, dipped for a minute into boiling lye to soften the skin, carefully washed, and dried in the sun, or in an evaporator.

Among our small fruits, we have several varieties of blueberries and huckleberries. Some of them grow in low, swampy ground, some on dry, hard soil, and others again on the rocky ground of the mountain side. These delicious fruits grow wild in such large quantities and in so many places that very small effort has been made to cultivate them, and most of the berries that we find on the markets have been picked in the woods and sent to the cities from long distances. Of late years, however, especially in New Hampshire, the "wild" blueberry fields have been carefully looked after. Canneries have been built close to these fields, large quantities of the fruit are preserved on the spot, and a flourishing industry is growing up in what might otherwise be waste places. The Department of Agriculture, at Washington, has been making experiments and ha found that improved varieties can be made to grow on ground which is fit for little else. Most of the blueberries are large and juicy, with a lovely blue bloom, and no more delicious fruit can be found. The huckleberry fruit is of a jet black color, and one variety has gritty little three-cornered seeds which make it less agreeable for eating. Blueberries and huckleberries both belong to the heath family.

THE CRANBERRY, FRUIT OF THE MARSHLANDS OF THE NORTH

A close relative of these fruits is the cranberry, the rich red berry dear to our hearts at Thanksgiving and Christmas time. For this berry we are indebted to the northern states; particularly the New England states, Michigan and Wisconsin. The cranberry that we know in this country grows only in North America, and it is only in North America that the cranberry is cultivated, so that we may truly call it a national fruit. Its cultivation was first begun on Cape Cod, and the marshes of that region are largely given over to its growth. It grows best on low, peaty ground. The plants are flooded during the winter season, but the bogs are drained in April. The fruit is picked in September and October and packed in barrels, and will keep for a long time. Large quantities are now exported, especially to France and the British Isles.

The southern states also give us melons by the tens of thousands, and strawberries. Thousands of acres are devoted to these crops all the way from Virginia to Alabama; and thousands of people are employed in cultivating them, and especially in picking them for northern markets. Large quantities of both these fruits are also grown in the north, and when the southern crop is almost over the northern crop begins to ripen.

There is nothing, indeed, in which this continent is more fortunate than in its ability to grow a great variety of fruit, and to get it to the people in all parts of the country, fresh and cheap.

THE NEXT STORY OF FAMILIAR THINGS IS ON PAGE 703.

WHERE THE BANANAS COME FROM

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The shopkeeper in America carefully guards his store of bananas, but here we see how little trouble is taken over the banana as it grows in Jamaica.

A fine growth of bananas in the Hawaiian Islands. They must be cut before they ripen, for they would spoil if packed when soft and ready for eating.

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We do not think of black men when we eat bananas, but black men grow them. Here are some black people in Jamaica carrying the banana to market.

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Cuban natives are here bringing their bananas for sale. Then the fruit will be stored in a ship and sent to America, to be sold at about two cents each.

GATHERING THE PINEAPPLES FOR MARKET

A field of pineapples in Florida. The pineapple loves warmth, but it must have moisture. Only one fruit grows upon the cultivated plant, but from the tuft of leaves at the top another pineapple might be grown.

In this picture we can see the harvesters gathering the pineapples ready to send to the market. The pickers have to be most careful, for the great broad leaves which we see have points as sharp as spears and edges like swords. Careless pickers invariably pay for their carelessness with badly cut hands and arms.

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GRAPES IN A VINERY, BLUEBERRIES OUT OF DOORS

This picture shows us how grapes are grown in countries where they will not ripen out of doors. A few very fine grapes are grown in vineries in some parts of the United States, but they are seldom found in our markets. Grapes like these which we used to see in the fruitshops came from Belgium.

All the blueberries that we buy come from wild bushes. In some places the blueberry fields are "burned over" every three years, but most of them do not even receive this attention. Blueberries, however, will repay cultivation in peaty ground, as we may see from these pictures of plants grown under the direction of the United States Department of Agriculture, on a farm in New Jersey.

HOW WE GATHER THE FIGS AND DATES

The picture shows us date-palms like those of which we read in the Bible. The date is of great importance to the people of Egypt and other Eastern countries, as it is their principal food. A good tree gives from 300 to 600 pounds in a year, and from the time it is thirty until it is one hundred years old.

Figs grow in some parts of America, but not to such perfection as these seen here, which are growing at Teneriffe, in the Canary Islands. The fig first grew in the East, but plants have been taken to many warm lands, and the fruit, whether eaten ripe or after being dried, is good and pleasant. The Austrians are said to sometimes mix figs with their coffee, which is supposed to be the best flavored in the world.

This is a picture of an apple-tree in blossom. Each of these blossoms will become an apple, if the weather be favorable. The wind and the insects will carry pollen from flower to flower to make the apple grow. The petals will drop off, and in their place the tiny fruit will form, which will ripen in autumn.

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THE LIFE-STORY OF AN APPLE IN PICTURES

On this page we have the life-story of the apple. First we see the bud, which, until it opens, can defy frost. Then, when warm weather comes, we see the handsome pink blossom waiting to catch the pollen.

The pollen has been brought, and some morning we find that the blossom has gone, and in the place of it we find a little green pellet, and if we watch this we shall see it grow into what the next picture shows.

Spring and summer have come and gone, and autumn is beginning; and here is the apple, ripe and sweet. There are two thousand sorts of apples, but though Europe and England and New Zealand grow very good kinds, no other apple is quite so fine-flavored and thin-skinned as our native apple.

PEACHES, PLUMS, & MELONS, AS THEY GROW

The delicious plum grows best on English soil, though France, Germany, and our own country grow fine ones. The plum makes good jam, which cannot be said of apples and pears which are much less juicy.

Peaches grow freely throughout the United States, and in parts of Canada. They came originally from Asia, and have been known for many centuries in China, where some people think they first grew.

Musk-melons, or cantaloupes, grow freely in almost every section of the United States. In England the climate is so much colder that they must be grown in hothouses, as shown in the above picture.

SOME FRUITS OF AN AMERICAN GARDEN

Here we see a bunch of white currants. These grow in our gardens, though they are not so plentiful as the red and black kinds.

Several varieties of blackberries grow wild in this country, and some kinds are cultivated. Those shown are common in the British Isles.

This is a picture of a bunch of black currants. The "currants" which we buy at the grocer's are really small dried red grapes.

Here is the gooseberry, which is common throughout Northern Europe and America. The best are English, and grow, not in Kent, where most of the fruit comes from, but in Lancashire.

These are cultivated raspberries. The wild ones are rather smaller, but they have a delicious flavor.

The English pear is the best in the world. In the western counties many men grow little besides pears and apples. Pears make a drink called perry.

Here are cherries, which grow in nearly all western countries. We eat the cherry as dessert, and preserve it, but Germans use it in their soup.

THE NEXT PICTURES OF FAMILIAR THINGS ARE ON PAGE 703.